DoD FuelMaster®
Advanced/Enhanced
(DoDFM AE)

Automated Fuel Service Station

User Manual

FuelMaster® FMU 2550/2551

June 25, 2002

Syn-Tech Systems, Inc.
P.O. Box 5258
Tallahassee, FL 32314

This is the back of page one ☺

DoD FuelMaster® Advanced Enhanced User Manual

Table of Contents

Section I. General Information....10

Safety Precautions.... 10
When Using the FuelMaster® FMU.... 10
When Working On The FuelMaster® FMU.... 11
Protecting Against Electrostatic Discharge.... 12
Certification/Approval.... 12
WARNINGs, Cautions and Notes.... 13
Basic FuelMaster® FMU Warranty.... 13
Initialization Requirement.... 13
Symbol Definitions.... 13

Section II. FuelMaster Equipmnet Specifications....16

FuelMaster® Equipment Specifications.... 14
Safety Related Inspections & Preventative Maintenance.... 14
Cleaning Instructions.... 14
Fuse Rating.... 14
Improvements.... 14
DoD FuelMaster® Advanced Enhanced.... 16
FuelMaster® Fuel Management Unit (FMU).... 16
Pedestal.... 16
Control panel.... 16
Prokee®/VIL.... 16
MFMU Fuel Management Unit.... 17
Mobile Fuel Management Units (MFMUs).... 17
Truck Interface Module (TIM).... 17
User Interface Terminal (UIT).... 17
Service Island.... 17
Fuel Dispensers.... 17
Telephone lines.... 18
Circuit Breakers.... 18
Central Controller.... 18
Printer.... 19
Prokee® Encoder.... 19
DoD FuelMaster® AE Program.... 20

Section III. Introduction.... 21

Fueling Operation.... 21
Summary.... 21
Application.... 22
Resolving Problems.... 22

Section IV. FMU Supervisor Menu.... 23

Configuration Menu (A):.... 23
Configuration Menu: (Hoses).... 23
Configuration Menu: (System).... 25
Configuration Menu: (Options).... 26
Configuration Tests Menu:.... 27
Configuration Tests Menu: (Switch).... 28
Configuration Tests Menu: (Outputs).... 28
Configuration Tests Menu: (LCD).... 28
Configuration Tests Menu: (Keypad).... 28

Configuration Tests Menu: (Prokee®) 28
Configuration Tests Menu: (Counts) 30
Configuration Tests Menu: (Reset) 30
Configuration Time/Date Menu 30
Supervisor Reports Menu (B): 32
Supervisor Hoses Menu (C): 32
FMU Operation (Automatic and manual) 33
Automatic Operation 33
Manual Operation 34
System Power-Off 35
Mobile FMU Operations 36
Automatic Operation 36
Mobile FMU Manual Override 36
Mobile FMU Configuration 37
Mobile FMU Pulser 37
Mobile FMU Transaction Retrieval Options: 37
Modem Transfer to Fixed FMU 37

Section V. Installing FuelMaster® DoDFM AE Central Controller Program 41

Section VI. Uninstalling DoDFM AE Central Controller Program 45

Section VII The DoD FM AE Central Controller Program 48

Operating from the main DoDFM AE window: 49
Basic Elements of the Central Controller Screen 49
File Menu 50
Configuration Menu 50
System Hardware Setup 50
Site Listing 52
General Tab 53
Tanks Tab 54
Tank Information Screen 55
VIR CONFIG Tab 58
VIR Configuration Screen – Hose Tab 59
VIR Configuration Screen – Misc Tab 61
TMU Tab 63
System Configuration 64
Set Grades Pricing 65
System Menu 66
DB Utilities 66
Recover Export Records 66
Recover by Download Time. 67
Recover by Date. 67
Recover All. 67
Calculate # Trans (Transactions) 67
Repair Database/Compact Database 67
Archive Records 68
Archive by Download Time. 69
Archive by Date. 69
Archive All. 69
Calculate # Trans (Transactions) 69
Restore Archived Records 69
Restore by Download Time 70
Restore by Date 70
Restore All 70
Calculate # Trans (Transactions) 71
Select Database 71

Export Configuration 71
User Maintenance 73
Service (FuelMaster NT Service) 75
Operations Menu 78
Export Transactions 78
Export Manually Entered Inventory Changes 79
Export Encoded VIL List 80
Export VIL Lock List 81
Export DoDAAC Lock List 82
Export Org./APC Lock List 83
Manual Entry Sales 84
VIR ProKee Encoding 86
Change APC/Org. Code and/or JON/Supplemental DoDAAC 88
Change Signal Code and/or Fund Code 88
Change JON/Supplemental DoDAAC Only 88
Change APC/Org. Code Only 88
Online Menu 92
Download 92
Transactions block 92
None 92
Download 92
Query 92
Auto Export 92
Mobile Transactions block 93
None 93
Mobile Only 93
Include mobile 93
Lock Lists block 93
VIL 93
DoDAAC 93
Org. Code 93
Rules 93
General page options 93
CONNECT 93
DISCONNECT 93
SAVE AUTO OPTIONS 93
SCHEDULE 93
CLOSE 94
Max Attempts 94
TMU 94
No Autodownload 95
Once 95
Weekly 95
Monthly 95
Time 95
Connect Window Operation 96
VIL Operations Menu 99
Vehicle VIL Listing 99
General Tab 100
Description (25A/N - Optional) 100
Customer ID Code (3A/N- Mandatory) 100
Organization/APC Code (4A/N - Optional) 100
Home Station DoDAAC (6A/N - Mandatory) 100
Miscellaneous (6A/N - Optional) 101
Trans ID (15A/N - Mandatory) 101
Comments (50A/N - Optional) 101
Lockout # (1N – Program Assigned) 101
Vehicle Year (4N - Optional) 101

Signal Code (1A/N - Mandatory) 101
Fund Code (2A/N - Mandatory) 101
Job Order Number/Supplemental DoDAAC (6A/N - Optional) 101
Authorized Check Box 101
Grades Tab 102
Grades block 102
VIL Grades 102
Tank Size – Optional 103
Range – Optional 103
Fueling Limit – Optional 103
Misc Tab 104
Authorized Check Box 104
Encoded check box 104
Expiration Date 104
Reissue Count 104
Config VIL List 105
Comment Field 106
Authorized Check Box 106
Encoded check box 107
Expiration Date 107
Lockout # 107
Mobile VIL List 107
Comment Field 109
Authorized Check Box 109
Encoded check box 109
Expiration Date 109
Lockout # 110
Display VIL Contents 110
Erase Key 111
Batch Encode 112
VIL Lock List 114
DoDACC Lockout List 117
APC/Org.Code Lockout List 124
Reports Menus 121
Vehicle VIL Report 121
Config VIL Reports 122
Mobile VIL Reports 123
Lock List Reports 123
Site Reports 125
Invoice Reports 128
Vehicle Information 128
Site 129
Message Reports 130
Message ID 130
Site ID 131
Transactions Reports 131
Vehicle Information 132
Site ID 133
Transaction Code 133
Transactions by Batch 134
Transaction Information 135
TMU (Tank Monitor Unit) Reports 136
Exception Reports 137
Fuel Quantity 138
Unauthorized Attempts 138
Transient 138
Number Fuelings 138
Polling Report 139

Active Ledger 140
Product Grade Code tab 142
Date 143
Receipts 143
Sales 143
Returns 144
Adjustments 144
Book 145
Physical 145
Gain/Loss 146

Section VIII. The How-To Guide For The DoDFM AE Central Controller 152

How do I make a vehicle Prokee®? 147
How do I make a Configuration Prokee®? 147
How do I make a Mobile Prokee®? 147
How do I look at (display) a Prokee®'s Contents? 147
How do I setup communications for the PC's modem? 148
How do I setup the Prokee® Encoder? 148
How do I define a parallel port? 148
How do I enter site phone numbers? 148
How do I change the password? 148
How do I change the site's name? 148
How do I change the hose numbers? 148
How do I change the divide ratio? 149
How do I change the system designator? 149
How do I change the julian date roll-over hour? 149
How do I change the valid key time out? 149
How do I change the pump finish time out? 149
How do I change the message duration? 149
How do I change the modem answer time? 150
How do I change the system time? 150
How do I change the system date? 150
How do I prevent a specific vehicle Prokee® from being accepted by a FMU (i.e., locked out)? 150
How do I get a FMU to accept a Config Prokee®? 150
How do I prevent Config Prokee®s from being accepted by a FMU? 150
How do I prevent mobile Prokee®s from being accepted by a FMU? 151
How do I prevent a group of vehicle Prokee®s from being accepted by their DoDAAC code? 151
How do I prevent a group of vehicle Prokee®s from being accepted by their Organization code? 152
How can I be sure that a Prokee® will be authorized for a grade code at another fueling site? 153
What does the file name mean? 153
How do I know what a file contains? 153

DoD FuelMaster® Advanced Enhanced User Manual

Documentation and CBT

- **New Computer Based Training Guide (CBT)**

  The DODFM AE software now has a Computer Based Training Guide (CBT) to provide users with a better understanding of the operation of DoDFM AE software. It is accessible from the DoDFM AE software **Help** menu by selecting **CBT** in the Help drop down menu.
  PG. 6)

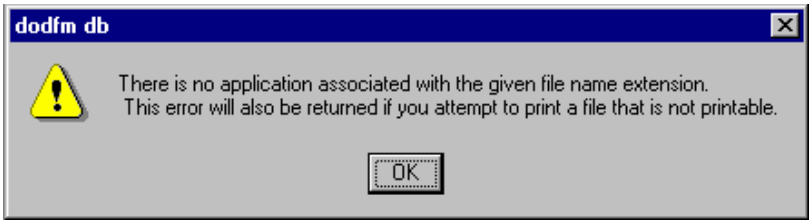
- **Online User Manual**

  The User Manual is now accessible from the DoDFM AE software by selecting **User Manual** in the Help drop down menu. The manual is in .pdf Adobe Acrobat format. If you do not have Adobe® Acrobat Reader™ installed, the first time you access the user Manual you will receive an error saying there is no file association for the file you opened. Click **OK** to continue and you will be prompted to install Acrobat Reader.

User Manual and CBT are accessible from the Help Menu.

Note: If you do not have Acrobat Reader™ installed:

You will be prompted to install Acrobat Reader the first time you access the User Manual. The following dialog will display if you do not have Acrobat Reader installed:
Note: You must be logged in as an administrator on the PC to install Acrobat Reader.



Click **OK** to close the dialog box and you will be prompted to install Acrobat Reader™.

After installing Acrobat Reader™, you will be back in the DoDFM AE software and the User Manual will be accessible from the Help menu.

DoD FuelMaster® Advanced Enhanced Upgrade Guide

Rev 1.0.0.10

Syn-Tech Systems, Inc.
PO Box 5258
Tallahassee, Florida 32314
Phone: (850) 878-2558
FAX: (850) 877-9327

TRADEMARK ACKNOWLEDGEMENTS:

SUPPORT INFORMATION:

On the web: http://www.syntech-fuelmaster.com

Phone: (800) 888-9136 Ext. 252

DoD FuelMaster® Advanced Enhanced User Manual

Section I. General Information

Purpose

The FuelMaster® fuel accounting and control system provides Syn-Tech's customer with a means to control access to petroleum products at un-manned service station and to account for and invoice for the dispensed petroleum products.

The FuelMaster® system accomplishes this with security from unauthorized user access while maintaining complete accountability of each transaction as it occurs.

Transaction data is compiled after data communication to a central accounting office hundreds, or thousands of miles remote from the servicing operations.

The FuelMaster® equipment can be integrated to extract accumulated transaction data from one service station, or several far removed and isolated service stations that report to one central accounting office.

Safety Precautions

The National Electrical Code (NEC) defines a fuel-dispensing site as a hazardous location and contains guidelines for the installation and operation of any equipment in such a location. The FuelMaster® installer must be knowledgeable of these and any other applicable safety codes and standards. All FuelMaster® and non-FuelMaster® equipment supplied by Syn-Tech Systems, Inc., complies with applicable federal, state, and local safety codes and standards.

This manual makes recommendations for commercially available equipment and materials that are required to complete an installation. Trade names and part numbers are also referenced to cite products that have been tested and known to be serviceable with FuelMaster® equipment. Modification of the equipment provided, substitution of any material requirements, or any deviation from these installation instructions must comply with all applicable safety codes and standards.

Use the following guidelines to help protect the FuelMaster® Fuel Management Unit (FMU) from potential damage and ensure personal safety.

WARNING

Do not operate the FuelMaster® FMU with any cover removed or door open.

Caution

Do not open the FuelMaster® FMU's doors during wet weather.

When Using the FuelMaster® FMU

Observe the following safety guidelines while using the FuelMaster® FMU.

- To help avoid damaging the FuelMaster® FMU, be sure the AC power available at the location is 110 volts, 60 hertz (Hz).
- To help prevent electrical shock, connect the FuelMaster® FMU into properly grounded sources.

- To help avoid possible damage to the FuelMaster® FMU and or other interfacing equipment, wait 5 seconds after turning off all interfacing equipment before

disconnecting any interconnecting cables.

- To help protect the FuelMaster® FMU from sudden, transient electrical increases, the FuelMaster® FMU is equipped with Surge Protection. All equipment interfacing the FuelMaster® FMU needs to use a surge suppressor, line conditioner, or un-interruptible power supply (UPS).

- Be sure nothing rests on the FuelMaster® FMU's cables and that the cables are not located where they can be stepped on or tripped over.

- Do not spill food or liquids on the FuelMaster® FMU or interfacing equipment.

- Do not push any objects into the openings of the FuelMaster® FMU.

- Doing so can cause fire or electrical shock by shorting-out internal components.

- Keep the FuelMaster® FMU away from radiators and heat sources.

When Working On the FuelMaster® FMU

Before opening the door or remove any FuelMaster® FMU's covers, perform the following steps in the sequence indicated.

WARNING

Do not attempt to service the FuelMaster® FMU, except as explained in this manual. Always follow installation and service instruction closely.

- Turn off/unplug the FuelMaster® FMU and any devices.

- Disconnect the FuelMaster® FMU and devices from their sources. Also disconnect any telephone or telecommunication lines from the FuelMaster® FMU to reduce the potential for personal injury or shock.

Certain system board components continue to receive power anytime the FuelMaster® FMU is connected to AC power

- Wear a wrist grounding strap or touch an unpainted metal surface on the chassis, such as the back panel, before touching anything inside the FuelMaster® FMU.

While working, periodically touch an unpainted metal surface on the FuelMaster® FMU chassis to dissipate any static electricity that might harm internal components.

In Addition, take note of these safety guidelines when appropriate:

- When disconnecting a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs. To disconnect this type of cable, press in the locking tabs before disconnecting the cable. When pulling connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before connecting a cable, make sure both connectors are correctly oriented and aligned.

- Handle components and Prokee®s with care. Don't touch the contacts on a Prokee®s, and hold components by their edges or by their metal mounting bracket.

Protecting Against Electrostatic Discharge

Static electricity can harm delicate components inside a FuelMaster® FMU. To prevent static damage, discharge static electricity from before touching any FuelMaster® FMU's electronic components. This can be accomplished by touching an unpainted metal surface on the FuelMaster® FMU chassis.

As work continues inside the FuelMaster® FMU, periodically touch an unpainted metal surface to remove any static charge that may have accumulated. The use of a wrist-grounding strap is highly recommended.

Additionally, take the following steps to prevent damage from electrostatic discharge (ESD):

- Keep a static-sensitive component in its antistatic packing material until ready to install the component in the FuelMaster® FMU. Before unwrapping the antistatic packaging, discharge electricity by touching a grounded metal object.
- Transport sensitive components in antistatic containers or packaging.
- Handle all sensitive components in a static-safe area. If possible, use antistatic floor pads and workbench pads.

Certification/Approval

The FuelMaster® FMU systems has been tested and safety certified by ETL Testing Laboratories, Inc., to ANSI/UL Specification 1238 for connection to UL-certified dispensers in NEC Class 1, Division 2, Group D locations. Equipment versions certified by ETL are identified by the ETL logo imprinted on the nameplate riveted to the FMU pedestal.

FuelMaster 2550 FMUs have been Safety tested to EN 61010-1:1993, Emission tested to EN 55011:1991, and Immunity tested to EMC Directive 89/336/EEC by TŰV Product Service. FuelMaster 2550 FMU produced to these standards carry a CE label.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules generates, uses and can radiate radio frequency energy and if not These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning off and on the equipment, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the radio/TV's receiving antenna;
- Increase the separation between the equipment and the radio/TV's receiver;
- Connect the equipment into an outlet on a circuit different from that to which the radio/TV's receiver is connected; and,
- Consult the dealer or an experienced radio/TV technician for help.

Warnings, Cautions and Notes

This manual emphasizes special operations with **Warnings**, **Cautions**, or **Notes** preceding the applicable procedure:

- A **WARNING** indicates a safety precaution that, if not followed, could result in personal injury;
- A **Caution** indicates a safety precaution that, if not followed, could result in damage to equipment; and,
- A **Note** indicates a procedure requiring special emphasis for the proper installation and operation of FuelMaster® equipment.

Basic FuelMaster® FMU Warranty

The basic warranty for each FuelMaster® FMU provides coverage for parts and telephonic labor for a period of one year from date of start-up or fifteen months from date of shipment, whichever occurs first. Each Prokee® is warranted against defects in material and workmanship for a period of one year. A toll-free number for technical assistance is also included. This line affords the customer access to product support personnel who will answer questions regarding operation of FuelMaster® hardware or software, and provide diagnostic capabilities when necessary.

Under terms of this agreement, FuelMaster® technicians will telephonically diagnose problems, with the assistance of the customer, to determine warrantable conditions, and possible problem solutions. Syn-Tech Systems, Inc. will replace all defective parts and provide assistance to the customer in installation of replacement parts to allow the unit to be repaired as expeditiously as possible. Please note that the FuelMaster® was designed in a modular manner to provide easy and rapid exchange of parts, even by non-technical personnel. Other systems are not designed this way and consequently; do not offer warranties comparable to FuelMaster®. This warranty does not cover site visits by FuelMaster® technicians for repair.

Please note that damage resulting from acts of god, user abuse, accidents, faulty installation or operation is not covered under the warranty. This warranty specifically excludes any indirect, special, or consequential damages to include, but not limited to, loss of product, profit, or litigation fees. Additionally, associated equipment including printers, personal computers, and other items not manufactured by Syn-Tech Systems, Inc. are warranted only to the extent covered by the original manufacturer. Additionally, warranty is limited to approved locations (generally the continental United States) and is not transferable except by written permission of Syn-Tech Systems, Inc.

Initialization Requirement

All FuelMaster® Fuel Management Systems must be initialized by Syn-Tech factory trained personnel. Initialization is the startup, inspection, and tests performed to certify the installation. Initialization can be completed only by a Syn-Tech FuelMaster® technician, or a technician who has completed the Syn-Tech FuelMaster® Technical Training Course. Final certification must be accomplished jointly by the Customer and Syn-Tech factory trained personnel.

Symbol Definitions


Definitions	Protective Conductor Terminal	Power Off	Power On
IEC417	5019	5008	5007

Section II. FuelMaster® Equipment Specifications

Rated Supply Voltage Limits	120VAC +/- 15%
Rated Supply Frequency	50 or 60 Hz
Rated Supply Current	4.0 amps Max operating
Operating Altitude, Max	2000 meters
Max Operating Relative Humidity	100%
Installation Category (surge arrestor)	III
Installation Category (after surge arrestor)	II
Pollution Degree	2

Safety Related Inspections & Preventative Maintenance

The FuelMaster® requires no preventative maintenance to retain its user safety features. Whenever the FuelMaster® is updated or repaired, a safety inspection should be performed including wiring integrity (power & grounds), Board retention, and safety covers.

Cleaning Instructions

The FMU chassis, keypad & LCD glass should be washed with a mild detergent (i.e., carwash soap) diluted with water. A soft sponge or cloth is recommended. Rinse with a low-pressure stream of water. The FMU is rated for rain exposure but not a horizontal high-pressure spray. The FMU works well and presents no safety problems when dirty. Frequency of cleaning is left to the user's discretion.

WARNING

Do not look into the receptacle when spraying contacts! Wear safety glasses to prevent getting spray in eyes!

In areas of high dust and high humidity the contacts of the Prokee® reader will need to be cleaned semi-monthly by spraying the contacts with a VCR head Cleaner (typically trichlorotriflouroethene) and then brushing with a stiff bristled non-metallic brush. Then rinse with another spray of cleaner.

Fuse Rating

The input Surge Protection Module uses four (4) Fuses: Two are rated 4 amps 250VAC, Fast Blow, 3AG size (1/4" x 1 ¼") similar to Littlefuse # 312.004. Two are rated ½ amp 250VAC, Fast Blow, 5x20mm size, similar to Littlefuse # 216.500.

The Pedestal Power fuse next to the power switch uses a 4 amp 250VAC, Slow Blow, 3AG size (1/4" x 1 ¼"), similar to Littlefuse # 313.004

The Modem card in the FMU head uses two fuses. Both are ¼ amp 250VAC, Fast Blow, 5x20mm size, Similar to Wickman # 195.250

Improvements

As an employee tasked to operate the DoD FuelMaster® AE system, you are our most important commentator. We value your opinion and feedback and want to know how we can improve this manual.

When you write, please be sure to include your name, fax and/or phone number and email address. Each of your comments will be evaluated and a response provided to you indicating which changes will be incorporated in the next revision of the manual. Contact us at

Fax: **(850) 877-9327**

Phone: **(850) 878-2558**

Email: **support@syntech-fuelmaster.com**

Mail: **Syn-Tech Systems, Inc.**

Attn: Product Support

P.O. Box 5258

Tallahassee, FL 32314

DoD FuelMaster® Advanced Enhanced

The Department of Defense FuelMaster® Advanced/Enhanced system (DoDFM AE) is Syn-Tech's state-of-the-art commercial fuel accounting which has been tailored to meet the DoD's specific operational needs.

FuelMaster® Fuel Management Unit (FMU)

Note

The initial U.S. Air Force fuel account systems designated the Fuel Management Unit (FMU) a <Vehicle Identification Reader (VIR)> and sometimes they were referred to as <VIL Readers>. Some of this <VIR and VIL Reader> terminology is still in use today. Although most reference has been eliminated some FMU LCD prompts still reference a VIL, which is a Prokee®.

FuelMaster® Fuel Management Units (FMUs) are manufactured and supplied by Syn-Tech Systems, Inc., as part of hardware and software fuel management, control and accounting package. The FMU(s) accumulate transaction data and provide control for fuel and oil product dispensers. Up to eight dispenser hoses may be controlled by one FMU. An Erasable Programmable Read Only Memory (EPROM) chip controls programming options. Upgrades and options may be installed by replacement of this EPROM. Manual operation is available through override switches located in the locked pedestal of each FMU. There are two types of FMUs a Master FMU (MFMU) and Satellite (SFMU).

- Master Fuel Management Units (MFMU). Data transfers to and from the servicing island are routed through a MFMU. The MFMU contains a modem that is necessary for independent operation. The MFMU may control up to eight dispenser hoses as well as eight SFMUs.

- Satellite Fuel Management Units (SFMU). When there are multiple islands at a site or more than eight hoses, a SFMU is an alternative to adding MFMUs. Using SFMUs, that send information to a MFMU, eliminates the need for extra phone lines. The SFMU and MFMU communicate through RS-422 wire communications.

Pedestal

Behind the pedestal access door are the terminal box, for external cable connections, and the manual override switches. The manual override switches directly override the FMU permitting product dispensing in the event of an equipment malfunction.

Control panel

The control panel includes a liquid crystal display (LCD) that is 2 lines by 40 characters, a numeric keypad (0 through 9, A through D, Enter/Yes, and Clear/No), a Prokee® receptacle and a credit card reader. It is through the control panel that the operator gains access to FMU for dispensing of fuel products.

Note

The initial U.S. Air Force fuel account systems designated the Prokee® a <VIL>. Some of this <VIL> terminology is still in use today.

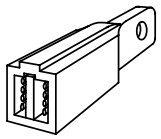
Prokee® /VIL

A Prokee® is the device that provides access to both fixed site and mobile FMUs. Each Prokee® has a non-volatile read/write memory chip that securely stores access and accounting information. The memory chip can be encoded or revised by the owner up to 10,000 times.

- A Prokee® is assigned to a specific vehicle or equipment item. Vehicle keys are encoded to authorize dispensing of selected products.

- A Mobile Prokee® is used (at a FMU) by the fuel truck driver (operator) to:

  1. set the phone number the Mobile FMU dials for retrieving;
  2. set the truck number;
  3. show the current total issues transferred; and,
  4. to initiate a transaction retrieve.



Prokee®

- A Configuration Prokee® provides for: updating product accounting information, dispensing products to vehicles that are not assigned access keys, and performing system diagnostics. This Prokee® is issued only to personnel who have overall responsibility for the operation of servicing sites.

MFMU Fuel Management Unit

Mobile Fuel Management Units (MFMUs)

The Mobile Fuel Management Unit(s) (MFMUs) are manufactured and supplied by Syn-Tech Systems, Inc. as part of hardware and software fuel management, control and accounting package. The MFMU(s) accumulate transaction data and provide control for fueling transactions by mobile fueling equipment. An Erasable Programmable Read Only Memory (EPROM) chip controls programming options. Upgrades and options may be installed by replacement of the EPROM. Manual operation is available through override switches located in the Truck Interface Module (TIM).

Truck Interface Module (TIM)

The TIM consists of a weather tight component box normally installed under the seat of the mobile tanker. It contains the controller circuitry that authorizes flow of fuel, collects transaction data and performs the uploading and downloading of data to the “fixed” FMU site.

User Interface Terminal (UIT)

The UIT consists of a weather tight panel normally installed in the trucks CAM box. It contains a display panel that prompts the user, Prokee® reader and keypad for user input. The UIT sends the user instruction to the TIM that carries them out.

Service Island

The Service Island is where the FMUs and dispensers are located for dispensing of fuel and oil products.

Fuel Dispensers

FMUs control accesses to and accrues transaction information from the dispensers on the Service Island. Through a configuration process, FMU operating parameters may be configured to accommodate a wide variety of fuel dispensers and operating requirements.

An FMU is normally installed at an existing station site. Consequently, the fuel dispensers are already in place and need only be integrated with the Fuel Management System. Fuel dispensers, however, have been developed and supplied in a wide assortment of configurations. It has been found that FMU is not directly compatible with some existing fuel dispenser arrangements. When this occurs, use of pulsers or flow control solenoid valves usually provide compatibility with FMU.

Telephone lines

Telephone lines for the IBM PC compatible computer and for each MFMU shall be USA voice grade. Sites using computer scanning or monitoring of telephone lines shall need to bypass scanning or monitoring of these lines.

Circuit Breakers

Output electrical power to each FMU may be routed through the power distribution panel that provides electrical power to the existing fuel dispensers, lighting, etc. Circuit breakers should be provided for each FMU.

Central Controller

The Central Controller is the personal computer used to run the FuelMaster® Fuel Management Software. The Central Controller communicates with the FuelMaster® Master FMU to download transaction data, upload authorizations, or to change FMU configuration.

Minimum PC Requirements	**Recommended** Minimum PC Requirements
133Mhz Pentium Processor	400Mhz Pentium II Processor
16Mb of RAM	32Mb of RAM
2x CD-ROM	12x CD-ROM
30Mb free Hard Drive Space	150Mb free Hard Drive space
2400 Baud Analog Modem	56K Baud Analog Modem
800x600 Screen Resolution	1024x768 Screen Resolution
A serial port	A serial port

The Central Controller may be any IBM-compatible PC, with a Pentium 133Hz, 16Mb RAM, a hard drive with 30MB of available disk space, Windows NT, a CD drive, a 3-1/2" diskette drive, a parallel port, and a serial port (for external modems). The modem (internal or external) must be 100% Hayes-compatible. The Central Controller is located in a Central Accounting Office; any location that can accommodate the PC, an attached printer, and the Prokee® Encoder. A PC and modem are not included with the base FuelMaster® system, but may be ordered through Syn-Tech Systems as part of a total package.

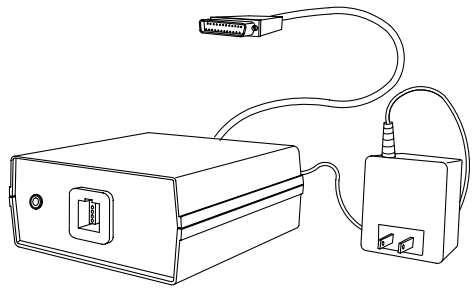
Reality Check: *the absolute minimum PC does not a happy software program make.* If one can afford a 900Mhz Pentium III, one will be much happier with all software, FuelMaster® included.

Printer

The Central Controller printer provides a printed record of transaction data received by the Central Controller. Any printer compatible with the Central Controller, Windows NT operating system, and the needs of the purchaser, may be used.

Prokee® Encoder

The Prokee® Encoder is supplied as part of the purchased Automated Fuel Service Station. It provides the operator with the capabilities to write data to, and read data from, the memory chip of the Prokee®. The Prokee® Encoder connects directly to an open parallel printer port in the Central Controller and is controlled by the FuelMaster® Supervisor Program. Due to the variances in the DC output driver voltages from different computer systems, the Prokee® Encoder is supplied with a DC power supply. This ensures a constant power source and compatibly with any selected computer system. When utilized in conjunction with the Central Controller and FuelMaster® Supervisor Program, the Prokee® Encoder encodes/revises Prokee®s with owner-selected confidential access codes to assure complete security against unauthorized system access and to permit accurate recording of product transaction as they occur.



Prokee® Encoder

Note

The initial U.S. Air Force fuel account systems designated the FuelMaster® Supervisor Program as the AFSS Supervisor Program. This usage should have disappeared.

DoD FuelMaster® AE Program

A specialized operating program is provided for FuelMaster® control and operation. The FAS compatible DoD FuelMaster® AE Program is used to perform the following functions:

- Set-up Program configuration;
- Set-up FMU configuration;
- Retrieve Transactions;
- Query Transactions;
- Administer Lockout data;
- Encode Prokee®s; and,
- Establish communication with FMU(s).

Section III. Introduction

This section provides a short step-by-step explanation of a Vehicle Servicing Operation.

Fueling Operation

The following tasks are performed during a typical vehicle servicing operation:

1. Operator positions vehicle adjacent to desired dispenser;

2. Operator goes to appropriate FMU and follows directions on the LCD to select the desired product pump:

   - Operator is prompted to insert and remove Prokee®. The FMU determines if the Prokee® is authorized;
   - If access is authorized, the FMU determines what product(s) are authorized;
   - Operator is prompted for the odometer of the vehicle;
   - The LCD displays product hoses that dispense the authorized product; and,
   - The operator selects the desired product hose;

3. FMU activates the selected product hose;

4. Operator goes to dispenser, removes dispensing nozzle, resets the dispenser (if applicable), and inserts nozzle into vehicle;

5. Operator dispenses product;

6. Operator replaces nozzle, returns to vehicle, and departs;

7. FMU records the transaction and turns off the selected product hose once the pump finish time-out is reached or the pump handle is returned to off; and,

8. At periodic intervals, Central Controller operator opens communications with the FMU and retrieves the transaction data.

Summary

When a FuelMaster® FMU is installed and placed in operation, it is capable of unattended operation. An operator choosing to make a servicing operation needs only complete two actions at the FMU:

1. Insert and remove the issued Prokee®; and,

2. Select a product hose from those displayed on the LCD and press **<Enter>**.

Application

This section provides expanded FMU operating instructions. FMU operating instructions are provided in step-by-step sequence for each procedure that must be performed to place the system in operation. When performing any procedure in this section, each procedural step should be read in its entirety before completing any action. Operations covered in this section include instructions for: System Power-on; FMU Configuration; FMU operation (programmed and manual); and, System Power-off.

Resolving Problems

In most cases, if a procedural step is not correctly performed an error message is displayed indicating the incorrect action or entry. These messages have been prepared to explain the cause and solution for the error. To avoid unnecessary detail and proliferation, not all situations leading to and resulting in error indication have been listed. If actual results, indication, or displays are not as described herein, and cannot be corrected with the guidance provided, consult a Syn-Tech Systems, Inc. technician for assistance.

Section IV. FMU Supervisor Menu

The following procedures are performed when power is applied to the system:

WARNING

Improper installation, repair, or modification could result in personal injury. Only qualified technicians should perform installation. After any installation and or any repair or modification is completed, system integrity shall be verified before the application of power to the FMU.

Engage the system circuit breaker(s) on the power distribution panel.

Check that the FMU's LCD display is at the default prompt of:

```
** FuelMaster FUELS ACCOUNTING SYSTEM **
** INSERT KEY, HOLD 1 SECOND TO BEGIN **
```

Note

The following procedure need not be performed if the FMU has been previously configured and system integrity has been maintained.

Note

The Prokee® receptacle contains spring-loaded contacts. Light to medium pressure must be exerted to compress the contacts before the Prokee® can be read.

Note

In the sample displays shown in these instructions, variable inputs (i.e., hose numbers, product codes, etc.) may differ from those shown on the actual FMU displays. Differences in the variables should not be construed as errors in these instructions or in the FMU displays.

Insert a configuration Prokee® in the Prokee® receptacle of the FMU.

```
SUPERVISOR MENU:
A = CONFIG, B = REPORTS, C = HOSES, D = EXIT
```

Configuration Menu (A):

Depress function key "A".

```
CONFIGURATION: 13:58:47, 03/20/89 FRI
A=MODIFY, B=TESTS, C=TIME/DATE, D=EXIT
```

Remove configuration Prokee®.

Note

When the top line of the display shows "CONFIGURE: A=SELECT; B=UP, C=DOWN, D-EXIT", depressing function key "B" increases the numerical value of the displayed variable. Depressing function key "C" decreases the numerical value of the variable. Depressing function key "A" enters the displayed value of the variable and selects the next entry. Depressing function key "D" initiates a return to the "CONFIGURATION MODIFICATION MENU".

Configuration Menu: (Hoses)

Depress function key “A” the following display is observed:

CONFIGURATION MODIFICATION MENU:
A=HOSES, B=SYSTEM, C=OPTIONS, D=EXIT

Depress function key “A” to modify the hose and product configuration.

CONFIGURE: A=SELECT; B=UP, C=DOWN, D=END
HOSE ‘A’: PUMP NUMBER= 1

Depress the applicable function keys(s) to set the desired hose number (0-99) for hose “A”, and depress function key “A” to select the next variable.

CONFIGURE: A=SELECT; B=UP, C=DOWN, D=END
HOSE “A”: PRODUCT CODE= 2

Depress the applicable function key(s) to set the desired product code (0-99) for hose “A”, and depress function key “A” to select the next variable.

CONFIGURE: A=SELECT; B=UP, C=DOWN, D=END
HOSE “A”: GRADE CODE = MUR

Depress the applicable function key(s) to set the desired grade code from the stored list for hose “A”, and depress function key “A” to select the next variable. A display similar to the following is observed

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
HOSE “A”: UNIT ISSUE = GL

Depress the applicable function key(s) to set the desired unit of issue from the stored list for hose “A”, and depress function key “A” to select the next variable.

CONFIGURE: A=SELECT; B=UP, C=DOWN, D=END
HOSE “A”: DIVIDE RATE = 10: 1

Depress the applicable function key(s) to set the desired divide rate (number of pulses per unit) for hose “A”, and depress function key “A” to select the next variable. A display similar to the following is observed

CONFIGURE: A=SELECT; B=UP, C=DOWN, D=END
HOSE “A”: DIVIDE RATE = 10: 1

Depress the applicable function key(s) to set the desired divide rate (number of units) for hose “A”, and depress function key “A” to select the next variable. A display similar to the following is observed

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
HOSE “A”: NO-PULSE TIMEOUT = 60

Depress the applicable function key(s) to set the desired no-pulse time-out setting (05-255) for hose “A”, and depress function key “A” to select the next variable.

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
HOSE "A": PUMP FINISH TIMEOUT = 20

Depress the applicable function key(s) to set the desired pump finish time-out setting (05-255) for hose "A", and depress function key "A" to select the next variable.

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
HOSE "A": USE PUMP HANDLE = NO

Depress the applicable function key(s) to set the desired pump handle detect setting (YES or NO) for hose "A", and depress function key "A" to select the next variable.

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
HOSE "B": PUMP NUMBER = 2

Repeat steps for all remaining hoses controlled by the FMU, and depress function key "D" to end FMU hoses configuration.

***** CONFIGURATION MODIFICATION MENU *****
A=HOSES, B=SYSTEM, C=OPTIONS, D=EXIT

Configuration Menu: (System)

Depress function key "B" to select the system configuration.

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
SYSTEM: VALID KEY TIMER = 60

Depress the applicable function key(s) to set the system valid key timer setting (05-255 seconds), and depress function key "A" to select the next variable.

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
SYSTEM: MESSAGE DURATION TIMER =10

Depress the applicable function key(s) to set the message duration timer setting (01-10 seconds), and depress function key "A" to select the next variable.

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
SYSTEM: MODEM ANSWER BEGIN TIME = 0

Note

The default values for Modem Answer Begin Time and Modem Answer End Time are 0 and 24, respectively. These settings allow the FMU to respond to an incoming telephone call during any time period. Should it be desired that the FMU not to respond to an incoming call during a period of time, Modem Answer Begin Time and Modem Answer End Time should be reset.

Depress the applicable function key(s) to set the system modem answer begin time setting (0-24 hours, on a 24-hour clock).

Depress function key "A" to select the next variable.

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
SYSTEM: MODEM ANSWER END TIME = 24

Depress the applicable function key(s) to set the system modem answer end time setting (0-24 hours, on a 24-hour clock), and depress function key "A" to select the next variable.

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
SYSTEM: AFSS SYSTEM DESIGNATOR = 01

Depress the applicable function key(s) to set the FMU SYSTEM DESIGNATOR from the store list, and depress function key "A" to select the next variable.

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
SYSTEM: JULIAN DATE CHANGE HR = 0

Depress the applicable function key(s) to set Julian Date Rollover Hour (range 0-23). Example: if one wants the new day (date) to begin at 0800 set the rollover to 08, this means that all transactions that occur from midnight to 0800 will be dated with the previous days date. (the norm is 0)

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
SYSTEM: ZERO QTY TRANSACTION LIMIT = 5

Depress the applicable function key(s) to set Zero Qty. "shutdown" Transaction Limit, and depress function key "D" to return to the CONFIGURATION MODIFICATION MENU.

***** CONFIGURATION MODIFICATION MENU *****
A=HOSES, B=SYSTEM, C=OPTIONS, D=EXIT

Configuration Menu: (Options)

Depress function key "C" to select the options menu.

OPTIONS MODIFICATION MENU:
A = TMU, B = DATA, C = RECEIPT, D = EXIT

Depress function key "A" to select the TMU (tank monitor unit) Baud Rate option menu:

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
TMU BAUD RATE = 2400

Depress function key "A" to select the TMU Data Bits option menu:

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
TMU DATA BITS = 8

Depress function key "A" to select the TMU Parity option menu:

CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
TMU PARITY = EVEN

Depress function key “D” to return to the OPTIONS menu:

```
OPTIONS MODIFICATION MENU:
A = TMU, B = DATA, C = RECEIPT, D = EXIT
```

Depress function key “B” to select the data option for Collect Personal ID:

```
NO USER DATA OPTIONS DATA AVAILABLE!
```

Depress function key “D” to return to the OPTIONS menu:

```
OPTIONS MODIFICATION MENU:
A = TMU, B = DATA, C = RECEIPT, D = EXIT
```

Depress function key “C” to select the receipt option:

```
CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
RECEIPT: PRINTER: PRINTER ENABLED=NO
```

ENABLE OR DISABLE THE RECEIPT PRINTER OPTION,

Depress function key “A” to select more receipt printer options:

```
CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
RECEIPT: PRINT AFTER PFAIL=
```

Depress function key “A” to select more receipt printer options:

```
CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
RECEIPT: PRINTER TYPE=
```

Depress function key “A” to select more receipt printer options:

```
CONFIGURE: A=SELECT, B=UP, C=DOWN, D=END
RECEIPT: PAPER CUT=
```

Depress function key “D” to exit the “CONFIGURATION MENU”.

```
* CONFIGURATION: 13:58:47, 03/20/89*
A=MODIFY, B=TESTS, C=TIME/DATE, D=EXIT
```

Configuration Tests Menu:

Depress function key “B” to select the diagnostic tests.

```
TESTS: 1=SWITCH, 2=OUTPUTS, 3=LCD, 4=KEYPAD
A=PROKEE, B=COUNT, C=RESET, D=EXIT
```

Configuration Tests Menu: (Switch)

Depress function key “1” to select the switches test.

```
SWITCH TEST: PH-87654321 MM-87654321
D= EXIT TEST 00000000 00000011
```

Switch Manual Mode (MM) switch(s) to check mode switch detect. Turn on pump handle to check pump handle (PH) detect, and depress function key “D” to return to the TEST MENU.

```
TESTS: 1=SWITCH, 2=OUTPUTS, 3=LCD, 4=KEYPAD
A=PROKEE, B=COUNTS, C=RESET, D=EXIT
```

Configuration Tests Menu: (Outputs)

Depress function key “2” to select relay output test.

```
* OUTPUTS TEST – OUTPUTS SHOULD PULSE *
** DURING TEST, PRESS ANY KEY TO EXIT **
```

Depress function key “D” to return to the TEST MENU

```
TESTS: 1=SWITCH, 2=OUTPUTS, 3=LCD, 4=KEYPAD
A=PROKEE, B=COUNTS, C=RESET, D=EXIT
```

Configuration Tests Menu: (LCD)

Depress function key “3” to select LCD test.

```
* LCD TEST – PRESS ANY KEY TO BEGIN **
** DURING TEST, PRESS ANY KEY TO EXIT **
```

Depress function key “D” to return to the TEST MENU

```
TESTS: 1=SWITCH, 2=OUTPUTS, 3=LCD, 4=KEYPAD
A=PROKEE, B=COUNTS, C=RESET, D=EXIT
```

Configuration Tests Menu: (Keypad)

Depress function key “4” to select KEYPAD test.

```
* KEYPAD TEST: PRESS KEYS TO TEST, D=EXIT *
KEY PRESSED = 1111
```

Depress function key “D” to return to the TEST MENU

```
TESTS: 1=SWITCH, 2=OUTPUTS, 3=LCD, 4=KEYPAD
A=PROKEE, B=COUNTS, C=RESET, D=EXIT
```

Configuration Tests Menu: (Prokee®)

Depress function key “A” to select the Prokee® Test.

PROKEE DISPLAY FORMAT:
1 = FIELDS, A = ASCII, B = HEX, D = EXIT

Depress function key “1” to select the FIELDS test.

PROKEE DISPLAY FORMAT:
PLEASE INSERT PROKEE TO BE DISPLAYED …

Insert Prokee® to be displayed then depress function key “A” to advance to more key information:

SITE SIGNATURE: 65535 (FFFF)	*example*
PROKEE: CONFIG001	*example*
DATA CONFIGURATION Prokee®	*example*

Depress function key “D” to return to the TEST MENU

PROKEE DISPLAY FORMAT:
1 = FIELDS, A = ASCII, B = HEX, D = EXIT

Depress function key “A” to select the ASCII test.

PROKEE DISPLAY FORMAT:
PLEASE INSERT PROKEE TO BE DISPLAYED . . .

Insert Prokee® to be displayed, the Prokee® is displayed in ASCCI: see example below

BYTE: 00 01 02 03 04 05 06 07 A=MORE
VALUE: - - - - - - C 0 D=EXIT

Depress function key “D” to return to the TEST MENU

PROKEE DISPLAY FORMAT:
1 = FIELDS, A = ASCII, B = HEX, D = EXIT

Depress function key “B” to select the HEX test.

PROKEE DISPLAY FORMAT:
PLEASE INSERT PROKEE TO BE DISPLAYED . . .

Insert Prokee® to be displayed, the Prokee® is displayed in HEX: see example below

BYTE: 00 01 02 03 04 05 06 07 A=MORE
VALUE: F6 14 FE ED 01 00 43 4F D=EXIT

Depress function key “D” to return to the TEST MENU

TESTS: 1=SWITCH, 2=OUTPUTS, 3=LCD, 4=KEYPAD

```
A=PROKEE, B=COUNTS, C=RESET, D=EXIT
```

Depress function key “B” to select the COUNTS test.

```
CNT TEST 1-00000 3-00000 5-00000 7-00000
D = EXIT 2-00000 4-00000 6-00000 8-00000
```

The counts test checks the serviceability of the pulse transmitters that are mounted in each dispenser. Once at this screen, switch the manual mode switch from “auto” to “manual”, turn on the pump handle and dispense one (1) gallon (unit) of fuel. The counter on the LCD should increment forward as one gallon is dispensed. In most cases the amount incremented is either 10(1:10 divide rate) so the counter would display “00010” or 100(1:100 divide rate) so the counter would display “00100”. A single count off in either direction is still considered accurate. If no count occurs it is likely that the pulse transmitter failed and needs replacement. Contact Syn-Tech Systems, Inc., Product Support regarding further tests.

Depress function key “D” to return to the TEST MENU

```
TESTS: 1=SWITCH, 2=OUTPUTS, 3=LCD, 4=KEYPAD
A=PROKEE, B=COUNTS, C=RESET, D=EXIT
```

Configuration Tests Menu: (Counts)

Depress function key “C” to select the RESET test.

```
*** POWER RESET TEST ***
* PRESS ANY KEY TO TEST OR ‘D’ TO EXIT *
```

Configuration Tests Menu: (Reset)

Depress function key “D” to select exit and abort the test.

```
*** POWER RESET TEST ***
*** POWER RESET TEST CANCELLED! ***
```

Press any key on the keypad and the FMU then performs its internal start up diagnostics and the LCD displays should come to the default prompt of:

```
** FuelMaster FUELS ACCOUNTING SYSTEM **
** INSERT KEY, HOLD 1 SECOND TO BEGIN **
```

Insert a configuration Prokee® in the Prokee® receptacle of the FMU for the Supervisor Menu.

```
SUPERVISOR MENU:
A = CONFIG, B = REPORTS, C = HOSES, D = EXIT
```

Remove configuration Prokee®.

Configuration Time/Date Menu

Depress function key “A” for the Configuration Menu

```
CONFIGURATION: 13:58:47, 03/20/89 FRI
A=MODIFY, B=TESTS, C=TIME/DATE, D=EXIT
```

Depress function key “C” to select the TIME/DATE menu.

```
TIME / DATE MENU: 13:28:21 12/12/98 SAT.
A=TIME, B-DATE, C=DAY OF WEEK, D=EXIT
```

Depress function key “A” to modify TIME.

```
SYSTEM TIME: 13:28:00 YES=ACCEPT D=EXIT
ENTER NEW TIME (hh:mm:ss)->
```

Enter hour (hh), minutes (mm), and seconds (ss) as read on a 24-hour clock. Single digit entries must be preceded by a zero (0). After entry of time select function key “ENTER/YES” to accept new time.

```
ENTER NEW TIME (hh:mm:ss)_ > 14:21:15
STORING NEW SYSTEM TIME . . .
```

Once the new time is stored a display similar to the following is observed:

```
TIME / DATE MENU: 13:28:21 12/12/98 SAT.
A=TIME, B-DATE, C=DAY OF WEEK, D=EXIT
```

Depress function key “B” to modify DATE.

```
CURRENT DATE: 12/12/98 YES=ACCEPT D=EXIT
ENTER NEW DATE (mm/dd/yy)->
```

Enter month (mm), day (dd), and year (yy). Single digit entries must be preceded by a zero (0). After entry of time select function key “ENTER/YES” to accept new date.

```
ENTER NEW DATE (mm/dd/yy) -> 12/13/98
STORING NEW SYSTEM DATE . . .
```

Once the new time is stored a display similar to the following is observed:

```
TIME / DATE MENU: 13:28:21 12/12/98 SAT.
A=TIME, B-DATE, C=DAY OF WEEK, D=EXIT
```

Depress function key “C” to modify DAY OF WEEK.

```
SETDAY OF WEEK: A=ACCEPT, B=CHANGE, D=END
DAY OF WEEK: SATURDAY
```

If day of week is incorrect depress function key “B”, the display scrolls through each day of the week one stroke at a time. When arriving at the correct date depress function key “A”.

```
DAY OF WEEK: SUNDAY
STORING NEW SYSTEM DAY OF WEEK . . .
```

Depress function key “D” to exit. Each time “D” is depressed the display will back up one menu until back to the default menu.

Supervisor Reports Menu (B):

**** FuelMaster FUELS ACCOUNTING SYSTEM **** **** INSERT KEY, HOLD 1 SECOND TO BEGIN ****

From the default prompt, insert a Configuration Prokee® in the Prokee® receptacle of the FMU for the Supervisor Menu.

SUPERVISOR MENU: **A = CONFIG, B = REPORTS, C = HOSES, D = EXIT**

Depress function key “B” for the REPORTS menu.

*** REPORTS: 1=ERR LOG, 2=LCD PRMPT LOG *** *** 3=ERR DUMP, A= CONFIG, D = EXIT ***

- By depressing the “1” function key a log of the stored USER ERRORS will be sent to the attached on-site printer.
- By depressing the “2” function key a log of the stored LCD PROMPTS will be sent to the attached on-site printer.
- By depressing the “3” function key a log of the stored FMU ERRORS will be sent to the attached on-site printer.
- By depressing the “A” function key a log of the stored FMU CONFIGURATION will be sent to the attached on-site printer.

Supervisor Hoses Menu (C):

Starting back at the main display menu:

**** FuelMaster FUELS ACCOUNTING SYSTEM **** **** INSERT KEY, HOLD 1 SECOND TO BEGIN ****

Insert the CONFIGURATION Prokee®, a display similar to the following is observed:

SUPERVISOR MENU: **A = CONFIG, B = REPORTS, C = HOSES, D = EXIT**

Depress function key “C” for the HOSES menu:

HOSES MENU: 1 = TOTALIZERS **A = SHUTDOWN, B = REENABLE, D = EXIT**

Press “1” for the TOTALIZER menu.

```
TOTALIZER MENU: 1 = SET CUMULATIVE
A = CLEAR CURRENT D = EXIT
```

- Set the numeric value of each hose totalizer by depressing the “1” key.
- Clear (reset to zero) the value of the hose totalizers by depressing the “A” function key.

Depress function key “D”, a display similar to the following is observed:

```
HOSES MENU: 1 = TOTALIZERS
A = SHUTDOWN, B = REENABLE, D = EXIT
```

Depress function key “A”, a display similar to the following is observed:

```
HOSES ACTIVE: 01, 02, 03 …….
ENTER HOSE TO SHUTDOWN (0 = ALL):
```

Enter the hose number to be shutdown and press **<Enter>**

Depress function key “B”, a display similar to the following is observed:

```
HOSES SHUTDOWN: 01, 02, 03 …….
ENTER HOSE TO REENABLE (0 = ALL):
```

Enter the hose number to be reenabled and press **<Enter>**

FMU Operation (Automatic and manual)

Normal self-service FMU operation for the selection and activation of product hoses is provided through the automatic capabilities of FMU. Manual switches are installed in the FMUs to override the automatic capabilities, if needed. Following are procedures for both programmed and manual operation of the FMUs:

Automatic Operation

The following procedures are for automatic operation of the FMU:

1. Position vehicle adjacent to the desired dispenser hose at the Service Island.
2. Reference dispense markings and locate the controlling FMU.
3. Check that the FMU control panel LCD displays:

```
** FuelMaster FUELS ACCOUNTING SYSTEM **
** INSERT KEY, HOLD 1 SECOND TO BEGIN **
```

4. Insert Prokee® in control panel Prokee® receptacle. The following display is shown:

```
REMOVE KEY, SELECT HOSE, PRESS <ENTER>
1,2,3,4,5,6,7,8,-----
```

(ONLY HOSES CONFIGURED AND ON THE Prokee® WILL BE OFFERED)

*** FUELMASTER ***
ENTER ODOMETER_____

5. Remove the Prokee®.

6. From the listing of hose numbers displayed, depress the number key corresponding to the desired product hose, and then depress **<Enter>**. The following display is observed.

*** DISPENSER ACTIVATED ***
*** DISPENSE PRODUCT ***

Note

If another transaction is selected from the FMU while dispensing is still in progress, the display in step 4 appears with an asterisk (*) shown immediately to the right of the hose in use (i.e., 1,2,3*, 4,5,6,7,8, ------) indicating that hose (3) is in use and cannot be selected until the previous transaction is complete.

Note

Once a product is selected and the **<Enter>** key depressed, there is a limit to the amount of time available to begin dispensing the product. This time limit is equal to the amount of time programmed for “NO-PULSE TIMEOUT”. If the time limit is exceeded, the display notifies the operator that the transaction is canceled. A new transaction may be initiated as soon as the default prompt reappears. The recommended No Pulse Timeout is 20-30 seconds.

7. Return to dispenser and remove nozzle for the selected product hose.

8. Reset dispenser, if required, and insert nozzle into vehicle.

Note

If fueling pauses, once dispensing of fuel has started, the FMU deactivates the selected product hose when a time equal to the “PUMP FINISH TIMER” is reached. Should the user commence fueling again prior to reaching this time limit, the FMU resets the timer and waits for the next pause in fueling operations. The recommended Pump Finish Timer is 10 seconds.

9. Dispense product as desired.

10. Remove nozzle from vehicle and replace on dispenser.

11. Return to vehicle and depart.

Manual Operation

The following procedures are for manual operation of the FMU:

1. Position vehicle adjacent to the desired dispenser hose at the Service Island.

2. Reference dispenser markings and locate the controlling FMU.

3. Obtain key and unlock and open pedestal access door to the controlling FMU.

Note

When the FMU system override switch is engaged, the FMU does not record transaction data. If the FMU is fully operational it may be desirable to leave the system override switch disengaged to permit the recording of transaction data. If the FMU is not operational, the system override switch should be engaged.

4. If applicable, locate and engage the system override switch.

5. Locate and engage the desired hose override switch.

6. Return to dispenser and remove nozzle.

7. Reset dispenser, if required, and insert nozzle into vehicle.

Note

During manual operation the FMU does not control the authorization or recording of each dispensing hose that is placed in the manual mode.

8. Dispense the desired amount of product.

9. Remove nozzle from vehicle and replace on dispenser.

10. Return to FMU, disengage the pump and if applicable, system override switches.

11. Close and lock FMU pedestal door. Return key.

Note

If the FMU is disabled and is not recording transaction data, it may be desirable to manually record all transactions until the FMU is returned to programmed operation.

12. If applicable, manually record the transaction.

13. Return to vehicle and depart.

System Power-Off

The following procedures are performed when power is removed from the system:

Note

If system power is removed while a transaction is in progress, or while the Central Controller operator has communications established with the MFMU(s), the transaction and communications are terminated. Upon transaction termination, the transaction(s) are stored in the FMU.

1. Check that the FMU's LCD displays:

**** FuelMaster FUELS ACCOUNTING SYSTEM ****
**** INSERT KEY, HOLD 1 SECOND TO BEGIN ****

2. Disengage the system circuit breaker(s) on the power distribution panel in the station house. System power is removed, and transactions and communications are terminated until system power is reapplied.

Mobile FMU Operations

In the field self-service FMU operation for the activation of the tank truck product hose is provided through the automatic capabilities of MFMU. Manual override switches are installed in the TIM (Truck Interface Module) to override the automatic capabilities, if needed. Following are procedures for both programmed (automated) and manual operation of the Mobile FMU.

Automatic Operation

The following procedures are for automatic operation of the Mobile FMU:

1. Position vehicle adjacent to the mobile tanker.

2. Check that the UIT (User Interface Terminal) displays:

**** FuelMaster FUELS ACCOUNTING SYSTEM ****
**** INSERT KEY, HOLD 1 SECOND TO BEGIN ****

3. Insert Prokee® into the UIT receptacle, the following display should appear:

**** VEHICLE REGISTRATION # = xxxxxxxx ****
**** PRESS <YES> IF CORRECT! ****

4. Depress function key “YES” and the following display should appear:

**** DISPENSER ACTIVATED ****
**** DISPENSE PRODUCT ****

After a short pause the display will change to the following prompt:

**** FUELING TRANSACTION IN PROCESS! ****
**** QUANTITY PUMPED = xxxx GAL. ****

xxxx represents the quantity and will increment as fuel is pumped. Once dispensing is complete and the finish timer has ended the transaction the following prompt will appear:

**** TRANSACTION COMPLETED! ****
**** TRANSACTION QUANTITY = xxxx GAL. ****

The Mobile FMU has completed this transaction and is ready for the next user to insert their Prokee®.

Mobile FMU Manual Override

If the Mobile FMU should malfunction and not operate properly or not record quantities because of pulser failure the unit is equipped with a manual override by-pass switch. The switch is located on the inside of the door of the TIM (Truck Interface Module). Normally the TIM is installed under the seat of the Truck. Push the thumb switch to manual mode and the Mobile FMU is by-passed. Keep a log of all manual transactions since the Mobile FMU will not record any quantities in this mode.

Mobile FMU Configuration

The configuration of the Mobile FMU is similar to the configuration of the fixed FMU except the configuration screen will only accept four (4) hoses instead of the eight (8) that a fixed FMU will handle. The DoD version of the Mobile FMU will only accept a configuration for one (1) hose, the "A" location. All settings and timers apply as they do for the Fixed FMU.

Mobile FMU Pulser

The pulse transmitter is a vital component to the operation and recording of fuel quantities. Without it the Mobile FMU cannot "see" fuel being pumped and as a result will shut off dispensing at expiration of the no-pulse timeout.

This will be allowed to occur until the Zero Quantity Transaction setting is reached, at which time the Mobile FMU will display the following message:

```
** HOSE HAS BEEN SHUTDOWN **
** PLEASE ALERT SUPERVISOR **
```

At this point the Configuration Prokee® will be needed to re-enable the hose.

Note

Currently Syn-Tech knows of two types of C-300/301's using two different divide ratio pulsers. The general rule of thumb to follow is:

- 1989 or older C-300's use a 39:4 divide ratio
- 1990 or newer C-300's use a 10:1 divide ratio

Mobile FMU Transaction Retrieval Options:

There are currently three (3) methods that can be used to retrieve fueling transactions from Mobile FMU's. All will be covered here in the order they are most often used:

Modem Transfer to Fixed FMU

This method involves positioning the truck near a installed download box and connecting a download cable from the "TIM" to the DOWNLOAD BOX. This will provide a voice grade dial tone to the modem located inside the TIM. Insert a MOBILE Prokee® into the Prokee® reader on the "UIT" and the following prompt will be displayed:

```
* MOBILE MENU: 1= MENU #2, 2 = SHOW TOTAL*
* B = DOWNLOAD D = EXIT *
```

The first step is to set up the communication parameters the TIM will to follow. Depress the function key 1 and the following will be observed:

```
* MOBILE MENU #2: *
* 1 = SETTINGS, C = RECIRCULATION, D = EXIT *
```

Depress function key 1 to advance to the next menu:

```
* MOBILE SETTINGS: *
* 1=PHONE NUMBER, 2=TRUCK NUMBER, D=EXIT*
```

Depress function key 1 to advance to the next menu:

```
* SELECT DIAL METHOD – CURRENT: xxxx *
* A=TONE, B=PULSE, Y=CURRENT, N=CANCEL *
```

Make the selection, a few seconds later the screen will change to:

```
* PHONE DIAL METHOD SET TO: *
* xxxx *
```

The screen will then change to:

```
* USE: A=ENABLE, B=DISABLE, D=CANCEL *
* DIAL TONE DETECTION: xxxxxxx *
```

Make the selection, a few seconds later the screen will change to:

```
* DIAL TONE DETECTION SET TO: *
* xxxxxxx *
```

The screen will then change to:

```
* CUR # = xxxxx *
* NEW # = _____ *
```

Enter the phone number to the Fixed FMU that this Mobile FMU will transfer transactions to and press the ENTER button, the screen will change to:

```
* PHONE NUMBER SET TO: xxxxx DIALING *
* xxxxx
```

A few seconds later the screen will change to:

```
* MOBILE SETTINGS:
*1=PHONE NUMBER, 2=TRUCK NUMBER, D=EXIT*
```

Press the function key 2 and the display will change to:

```
** CURRENT TRUCK NUMBER = xx **
* NEW TRUCK NUMBER = xx **
```

Enter the new truck number and press the ENTER button, the screen will change to:

```
** CUR TRUCK NUMBER = xx **
** TRUCK NUMBER SET TO:  x **
```

After a few seconds the screen will return to:

```
* MOBILE SETTINGS: *
```

```
* 1=PHONE NUMBER, 2=TRUCK NUMBER, D=EXIT*
```

Press function key D twice to return to:

```
* MOBILE MENU: 1= MENU #2, 2 = SHOW TOTAL*
* B = DOWNLOAD D = EXIT *
```

Before performing the transaction download it is recommended that transactions totals are checked. To do this function press function key 2 and the following menu will be observed:

```
** CURRENT TOTAL ISSUES = xxxx **
** PRESS ANY KEY TO RETURN TO MENU... **
```

The download is executed from the MOBILE MENU. Select function key B and the following sequence of events should occur. It is recommended that the operator watch the display for the following:

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** DIALING MASTER FMU **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** CONNECTED TO MASTER FMU! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** ATTEMPTING LOGON TO MASTER FMU! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** LOGGED ON MASTER FMU! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** INITIALIZING MASTER FMU! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** MASTER FMU INITIALIZED! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** WAITING FOR MASTER FMU COMMAND! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** RECEIVING MASTER PROKEE LOCK LIST! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** PROKEE LOCK LIST RECEIVED! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** RECEIVING MASTER ORG LOCK LIST! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** ORG LOCK LIST RECEIVED! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** RECEIVING MASTER DODAAC LOCK LIST! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** DODAAC LOCK LIST RECEIVED! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** RECEIVING PROKEE COUNT FROM MASTER! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** RECEIVING ORG COUNT FROM MASTER! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** RECEIVING DODAAC COUNT FROM MASTER!**
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** SENDING TRANSACTION CNT TO MASTER! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** SENDING TRANSACTONS TO MASTER FMU! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** DOWNLOAD SUCCESSFULL: 7 TRANS **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** INITIALING TRANSACTION ARCHIVE! **
```

```
** MOBILE FMU TRANSACTION DOWNLOADING **
** EXITING MOBILE DOWNLOAD OPERATION! **
```

```
* MOBILE DWNLD COMPLETED SUCCESSFULLY! *
* PRESS ANY KEY TO CONTINUE.... *
```

```
* MOBILE MENU: 1=MENU #2, 2=SHOW TOTAL *
* B=DOWNLOAD D=EXIT *
```

Using the keypad, enter “D” to exit to the previous menu:

**** FuelMaster FUELS ACCOUNTING SYSTEM ****
**** INSERT KEY, HOLD 1 SECOND TO BEGIN ****

The transactions are now stored in memory at the Fixed FMU site and may be retrieved or queried from the designated central controller office with the DoDFM AE program.

Remove the Mobile Prokee® from the UIT and disconnect the Download Cable from the Download box.

Section V. Installing The FuelMaster® DoDFM AE Central Controller Program

Insert the FuelMaster® DoD FM AE CD-ROM into the PC's CD-ROM drive and wait briefly until the PC recognizes the CD and self-starts the setup program. Most PC's possessing the Windows 98/NT/2000 operating system will start automatically when the CD is inserted into the CD-ROM drive. If the setup program does not self-start, from the task bar depress the start button 

and Click Run. Type <drive>\setup.exe and press Enter, where <drive> corresponds to the drive letter of your CD-ROM. For example, if your CD-ROM is drive D:, type D:\SETUP.EXE and press Enter.

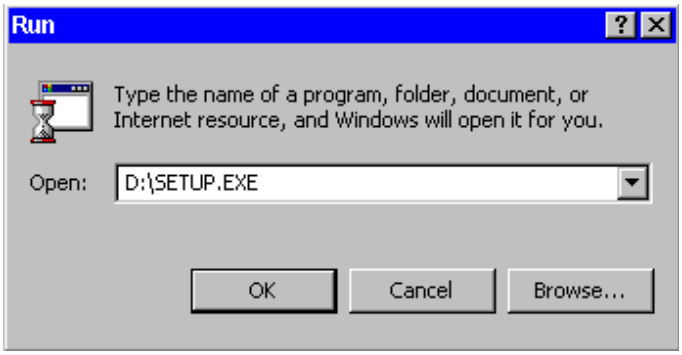


Figure 1-1, Run Setup Screen

The Install shield will now execute the FuelMaster® DoDFM AE applications program. See Figure X-X.

Figure 1-2, DoDFM AE Logo Screen

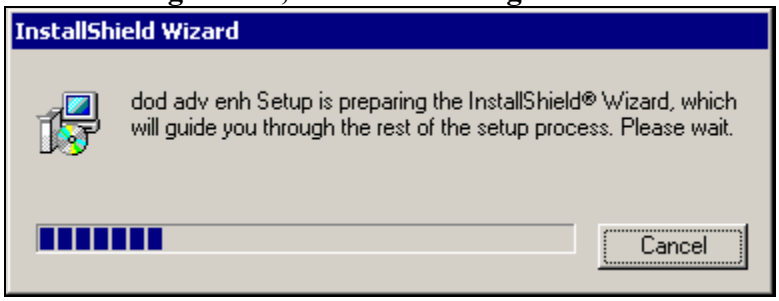


Figure 1-3, InstallShield Wizard

The screen displayed recommends that you exit all Windows programs before continuing. At this time Close all open programs and Click Next.

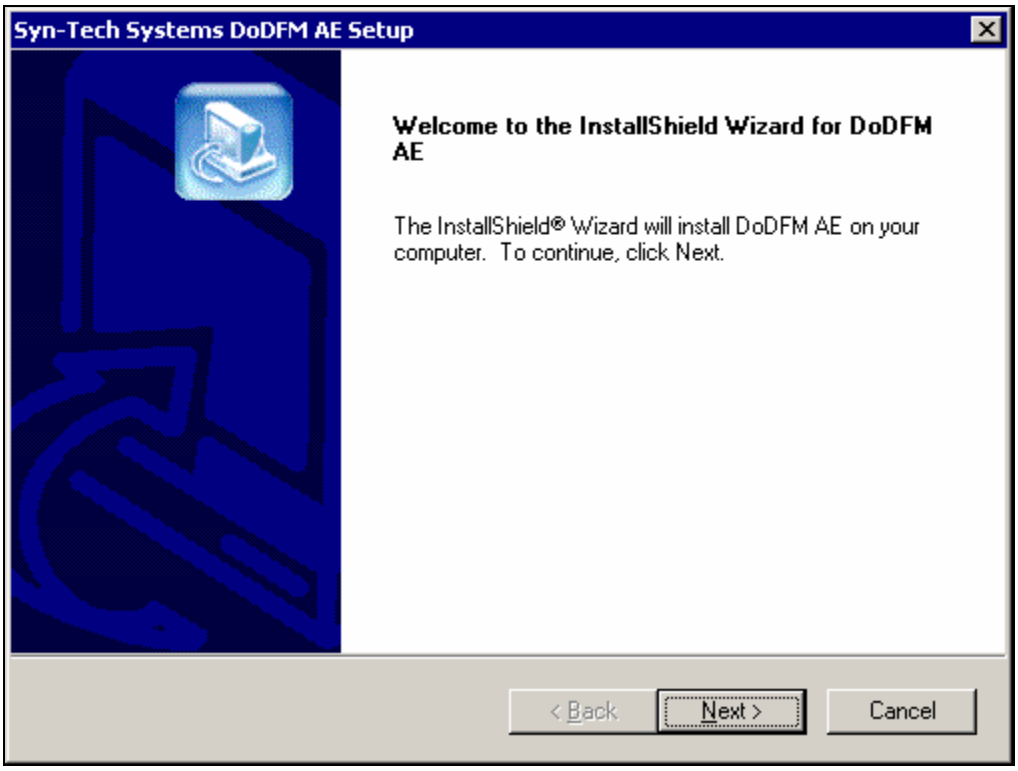


Figure 1-4, Welcome to DoDFM AE Setup Screen

It is strongly recommended that you read the software licensing agreement. Click Next to continue with the installation or No to Close the Setup.

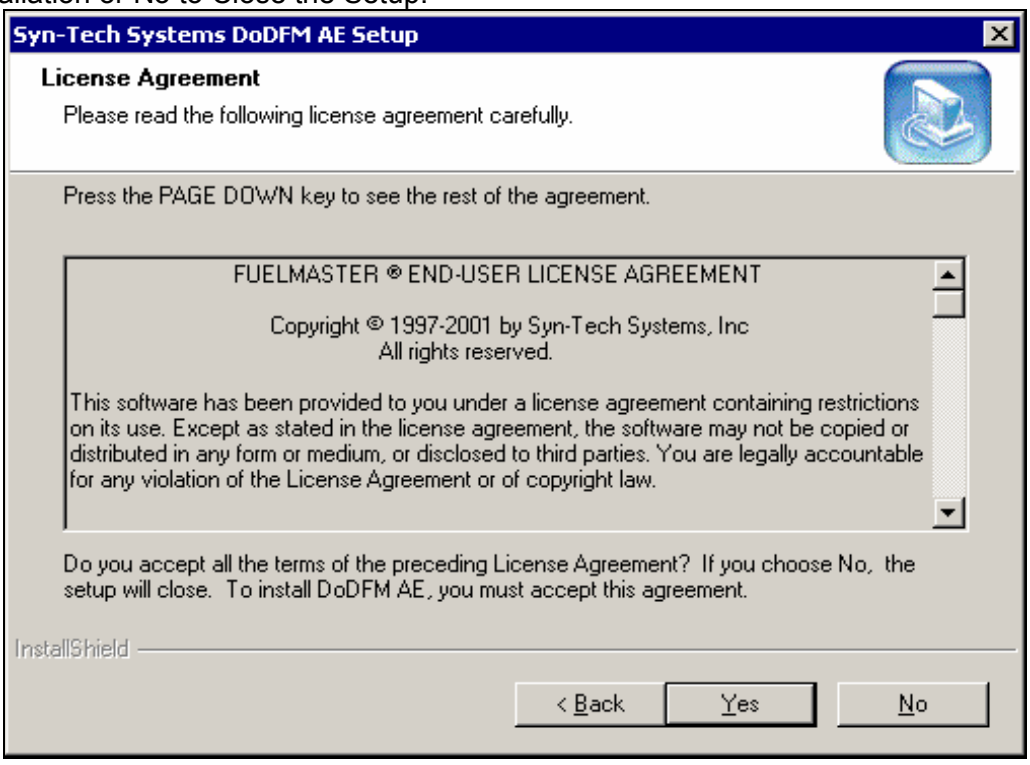


Figure 1-5, FuelMaster® End User License Agreement

If Yes is chosen, the user is prompted to enter their name and company to properly register use of the application.

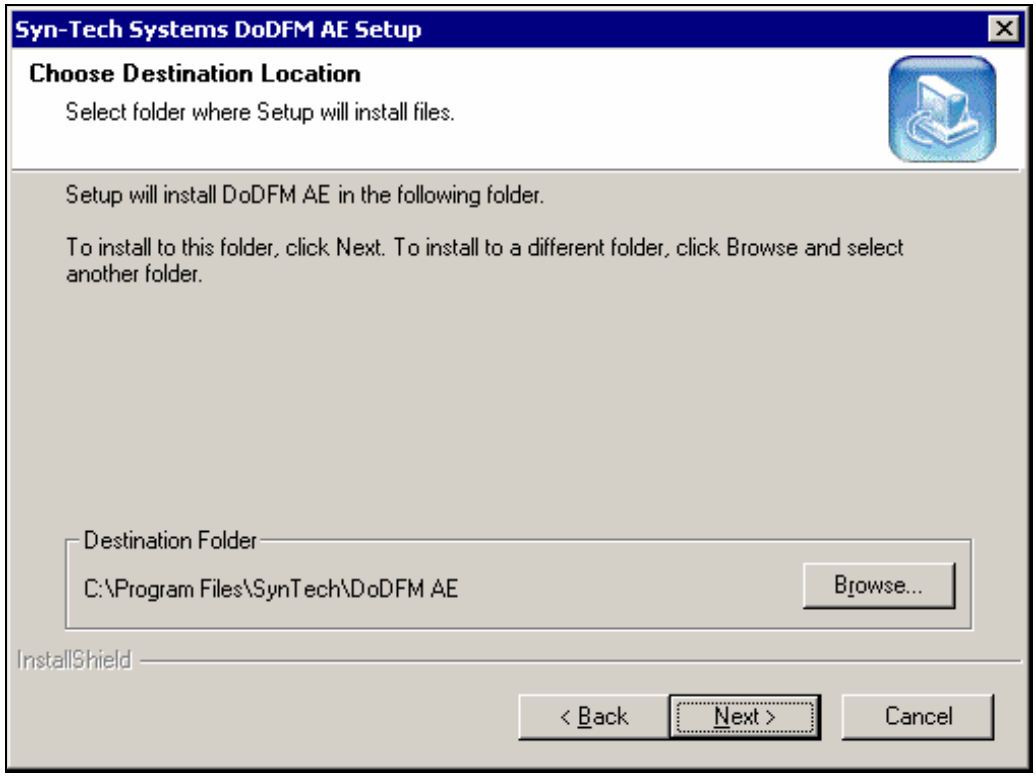


Figure 1-6, FuelMaster® User Registration Screen

The user can select a different program folder than is chosen. Click Next to continue.

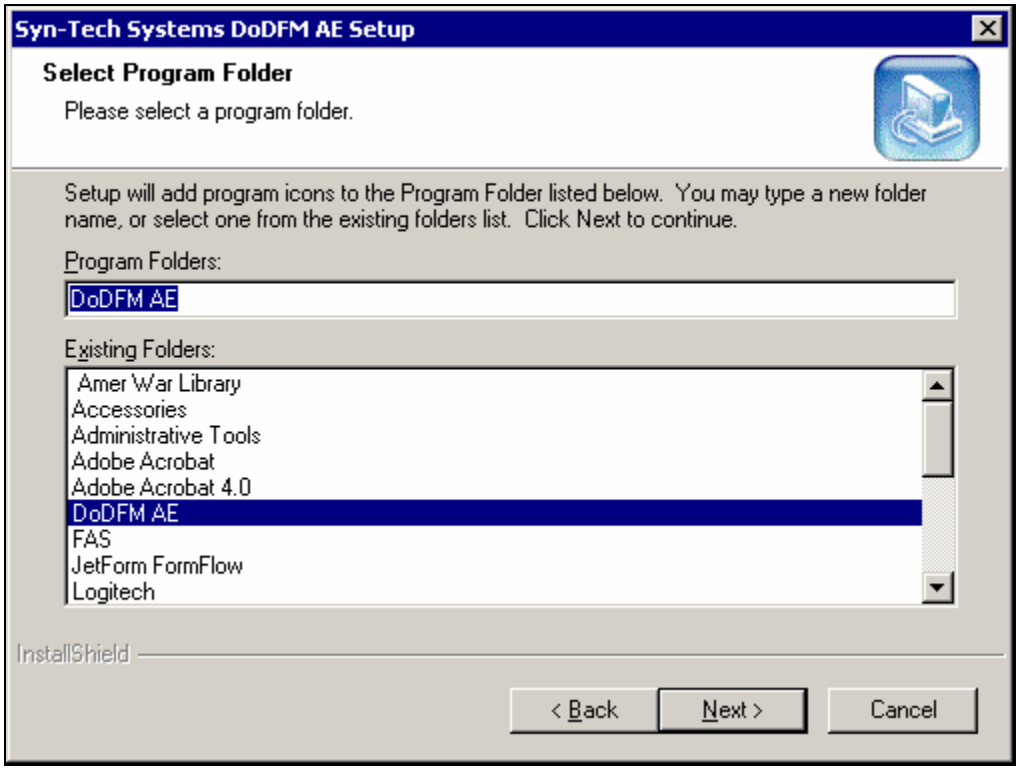


Figure 1-7, Select Program Folder Screen

Clicking next will invoke the following screen indicating the Setup status.

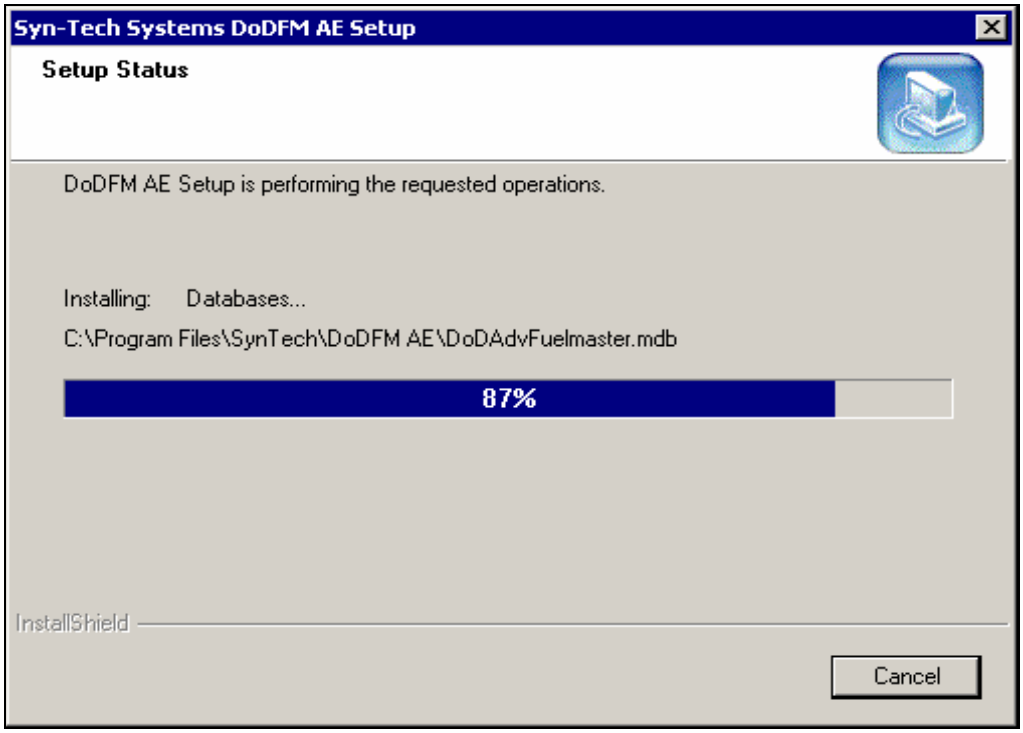


Figure 1-8, Setup Status Screen

Congratulations! Setup is complete and your DoDFM AE application can now be launched. Click Finish to proceed.

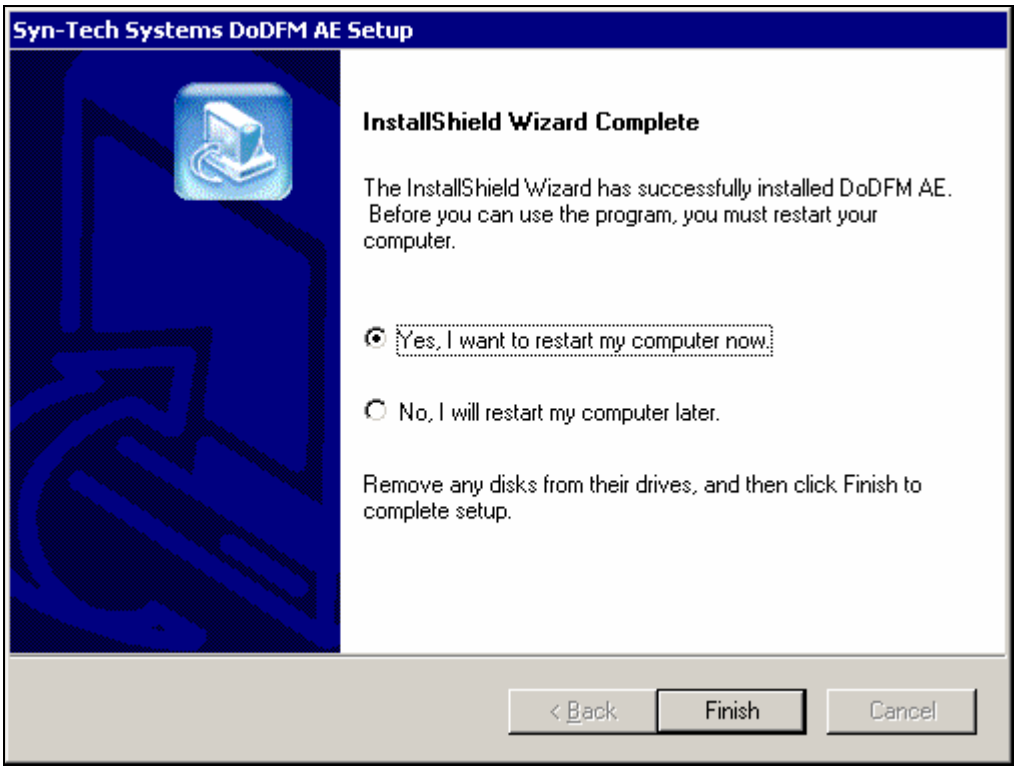


Figure 1-9, Setup Complete Screen

Section VI. Uninstalling DoDFM AE Central Controller Program

Insert the FuelMaster® DoD FM AE CD-ROM into the PC's CD-ROM drive and wait briefly until the PC recognizes the CD and self-starts the setup program. Most PC's possessing the Windows 98/NT/2000 operating system will start automatically when the CD is inserted into the CD-ROM drive. If the setup program does not self-start, from the task bar depress the start button 

and Click Run. Type <drive>\setup.exe and press Enter, where <drive> corresponds to the drive letter of your CD-ROM. For example, if your CD-ROM is drive D:, type D:\SETUP.EXE and press Enter.

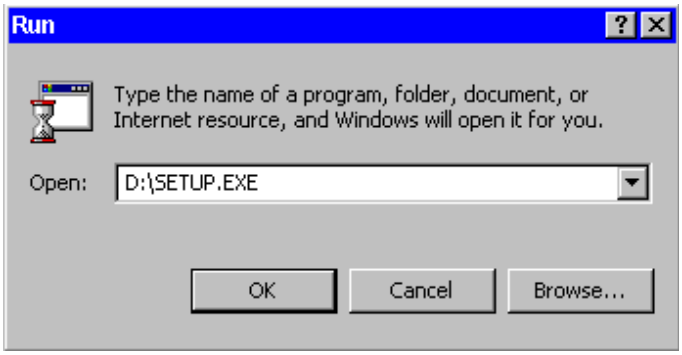


Figure 2-1, Run Setup Screen

The Install shield will now execute the FuelMaster® DoDFM AE applications program.

Figure 2-2, DoDFM AE Logo Screen

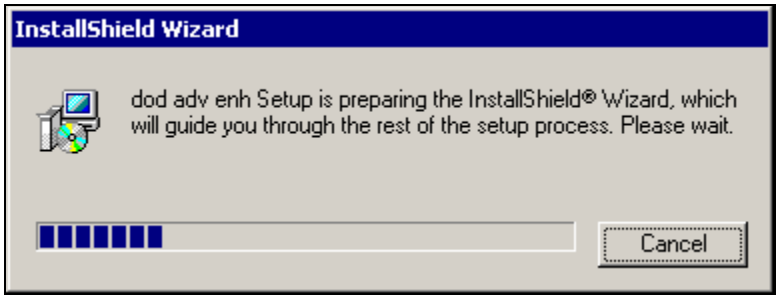


Figure 2-3, InstallShield Wizard

The following screen is displayed. To uninstall the FuelMaster® DoDFM AE applications program select Remove to remove all installed FuelMaster® DoDFM AE components and Click Next.

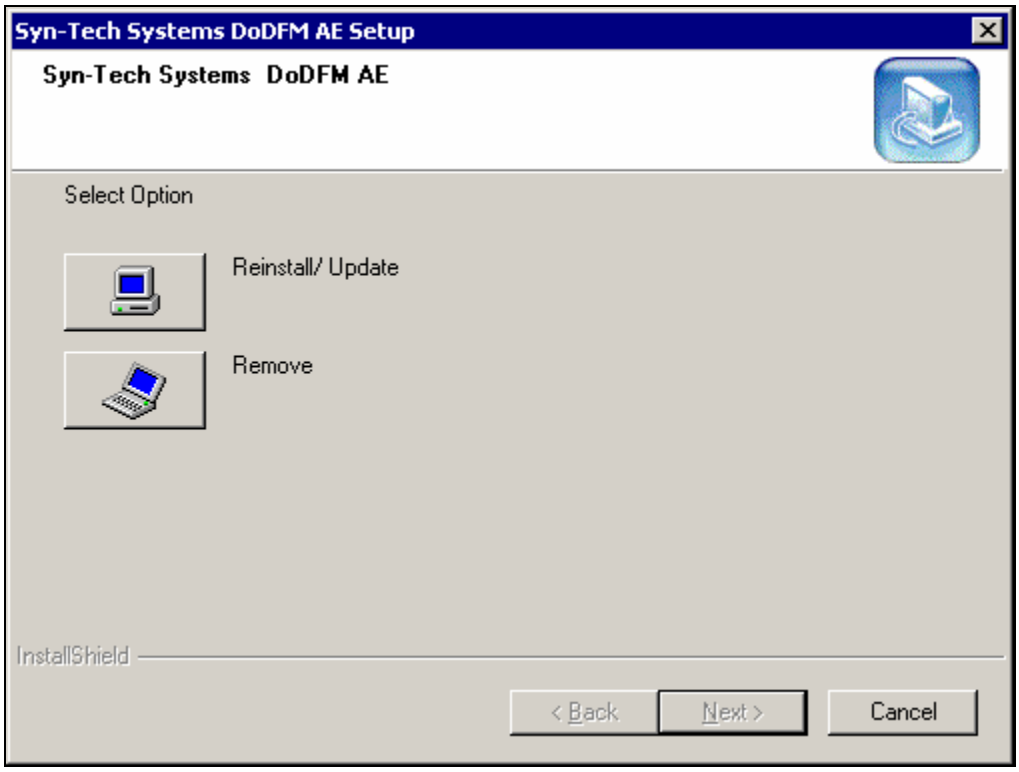


Figure 2-4, Reinstall/Update or Remove Setup Screen

The following screen confirms that all FuelMaster® DoDFM AE components are now removed. You must restart your computer for the changes to take affect. Click Finish to restart your computer.

Note

DoDFM AE will rename the old FuelMaster database and place it on the desktop. The file will be named “removed.(today’s date).DoDAdvFuelMaster.mdb”.

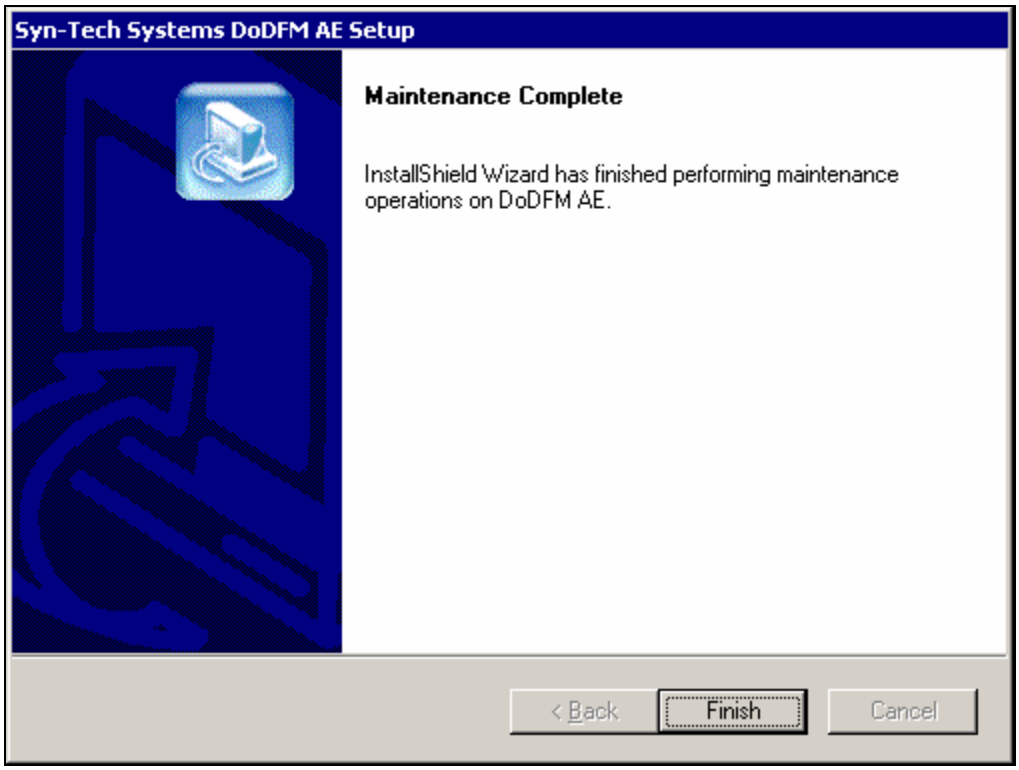


Figure 2-5, Setup Complete Screen

Section VII. The DoD FM AE Central Controller Application

To start DoDFM AE:

After installing the FuelMaster® DoDFM AE applications program you will want to invoke the program and configure the system for use. To invoke the FuelMaster® DoDFM AE program Double Click the FuelMaster® DoDFM AE Icon.

Figure 3-1, FuelMaster® DoDFM AE Icon

Double Clicking the FuelMaster® DoDFM AE Icon will present the main FuelMaster® DoDFM AE Logon screen.

Figure 3-2, FuelMaster® DoDFM AE Logon Screen

If this is the first time use of the FuelMaster® DoDFM AE program, use the User Name: **admin** and Enter Password: **admin** to gain access to the program. Please note that for this initial Login the words **admin** are in lower case letters. Click Login to proceed.

Alternatively you can access the DoDFM AE program from the Start menu bar Start, highlight Programs, highlight DoDFM AE and **<Click>** on the DoDFM AE icon as depicted below;

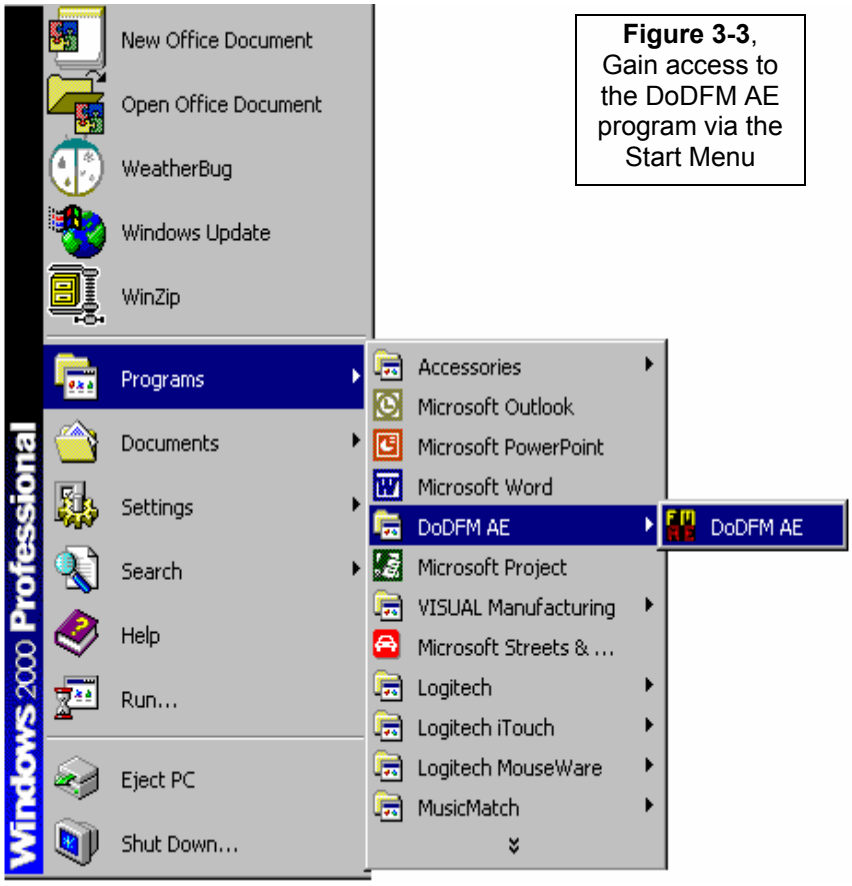


Figure 3-3, Gain access to the DoDFM AE program via the Start Menu

Operating from the main DoDFM AE window:

The main DoDFM AE screen contains ten (10) Pulldown menus, with Twelve (12) Icons on the tool bar as well as a Status Bar across the bottom of the screen.

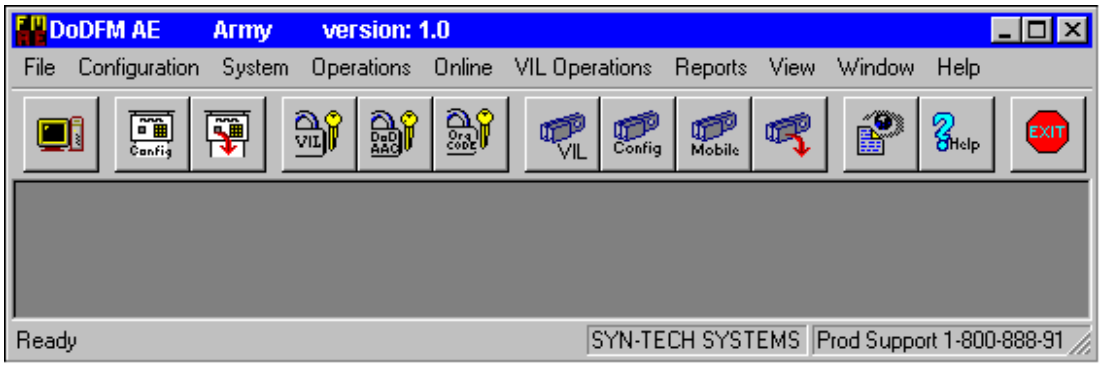


Figure 3-4, FuelMaster Main Menu

Each of the pull down menus list what actions can be executed and many hold more options and more menus as listed below:

Basic Elements of the Central Controller Screen

The Central Controller Screen provides everything you need to manage your DoDFM AE application and database files easily and efficiently. The following illustrations describe each of the twelve menu bar functions. Those menus are: File, Configuration, System, Operations, Online, VIL Operations, Reports, View, Window, and Help.

File Menu

The following table describes the commands found on the File menu.

Use	To
Ledger…	Opens the Active Ledger
Close…	Closes the active document
Print	Print the status of Download Status Window. If multiple Download sessions are open, you must select which session you want to print by clicking the "Print (x) status when printing" option in the Download Status Window before printing, where (x) is wire, RF or modem.
Printer Setup	Set the margins, paper source, paper size, page orientation and other layout options for the file you want to print.
Exit	Closes the program.

Configuration Menu

System Hardware Setup

The first step in configuring the FuelMaster software is to configure the System Hardware Setup. System Hardware Setup provides configuration parameters for the PC's modem and the AFSS ProKee Encoder. Gain access to this menu by clicking on the Configuration pull down menu and selecting System Hardware Setup as shown below.

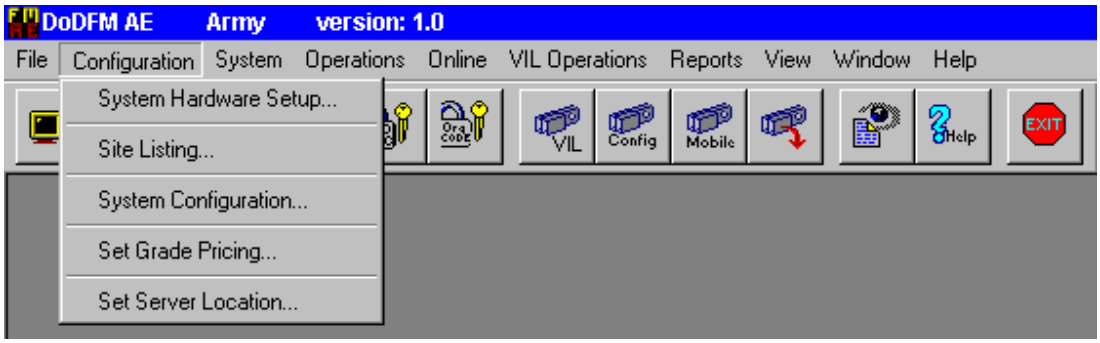


Figure 3-5, Configuration Menu – System Hardware Setup

Selecting the **System Hardware Setup** pull down menu will portray the following screen containing two tabs; Modem and Misc (miscellaneous).

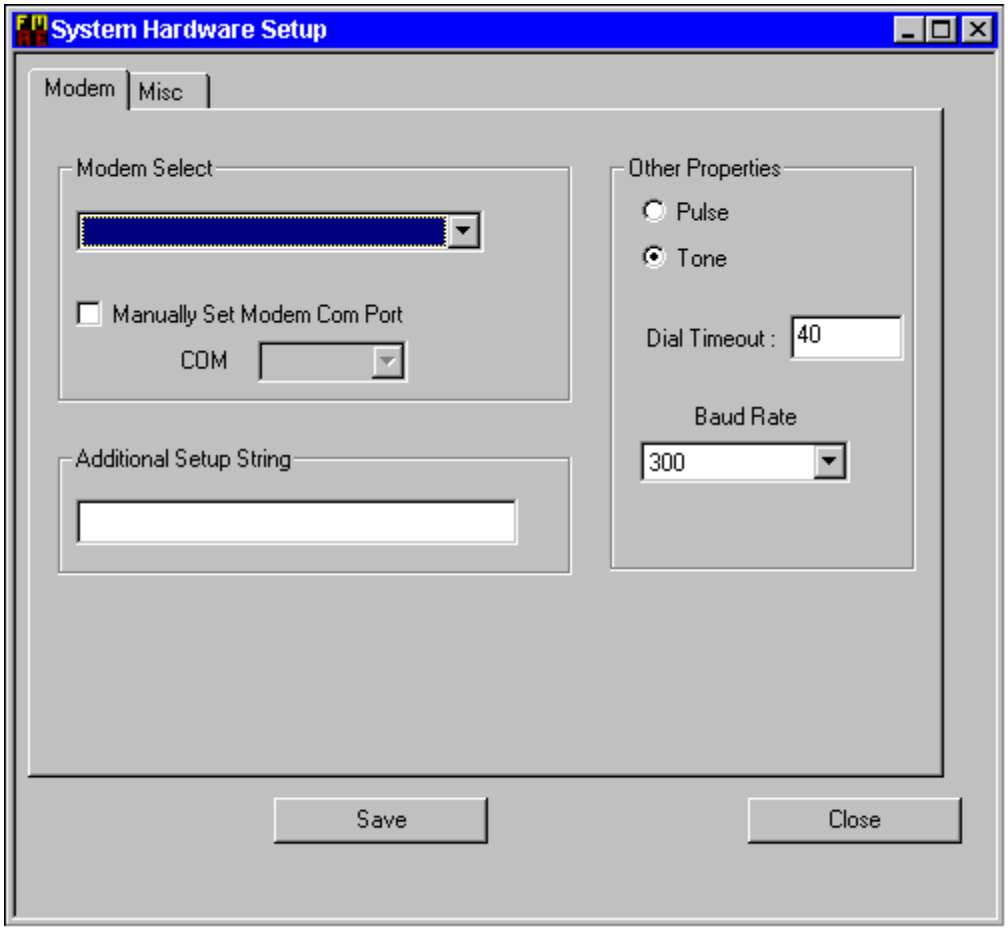


Figure 3-6, System Hardware Setup – Modem Tab

The **Modem tab** of the System Hardware Setup screen is separated into three blocks of data; *Modem Select, Additional Setup String* and *Other Properties* (See Figure 4-6). In the *Modem* select block of the screen, DO NOT check the "Manually Check Modem Com Port" check box to allow Microsoft Windows to find and configure the modem. This is the preferred method to configure the modem. Leave the *Additional Setup String* select block blank. It is seldom needed, if communications do not work contact the Syn-Tech Systems help desk for guidance in determining an additional setup string. In the *Other Properties* select block, Select the type of phone system (pulse or tone) at your location and make a dial timeout entry (this is the amount of time in seconds that the program will ring when dialing a site before automatically disconnecting). Thirty to forty five seconds is the recommended timeout. In addition, select BAUD rate for the modem via the pull down menu that is provided for Baud Rate. Selection of a baud rate is needed only when noise/dirty phone lines are encountered.

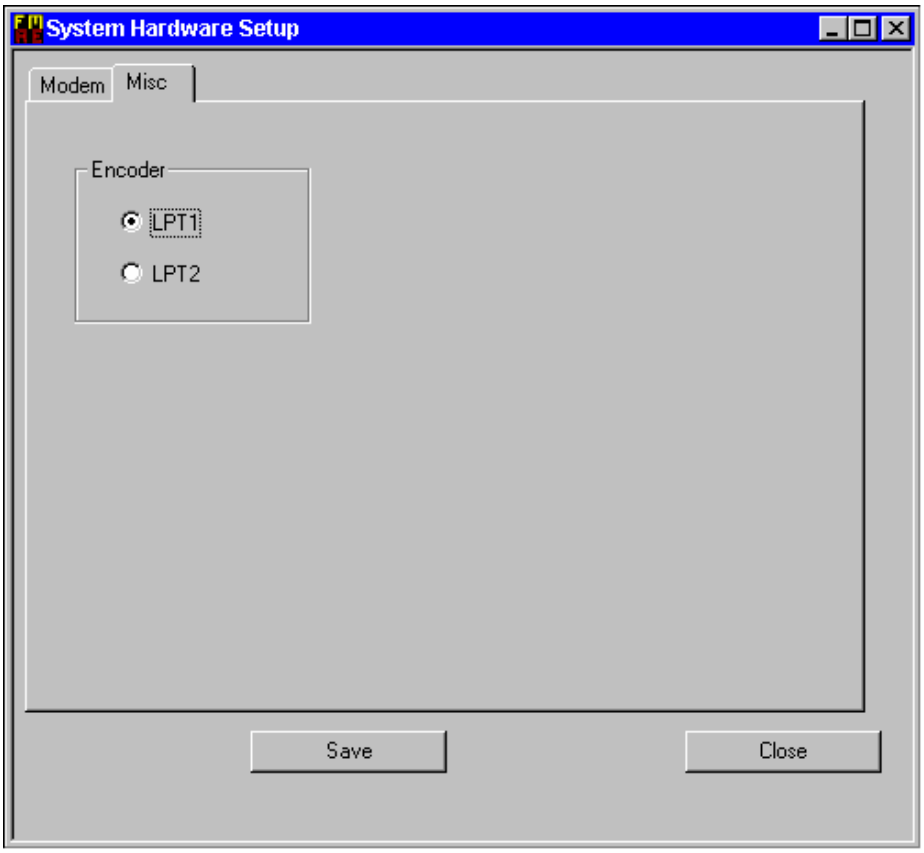


Figure 3-7, System Hardware Setup – Misc Tab

The misc or miscellaneous tab of the System Hardware Setup screen provides for configuration of the parallel port where the Encoder is physically attached. Select either LPT1 or LPT2. Click the Save button when completed.

Site Listing

The Site Listing menu provides additional configuration parameters specific to the configured site. The Site Listing screen contains four submenu tabs; General, Tanks, VIR Config and TMU. Gain access to this menu by clicking on the Configuration pull down menu and selecting Site Listing as shown below.

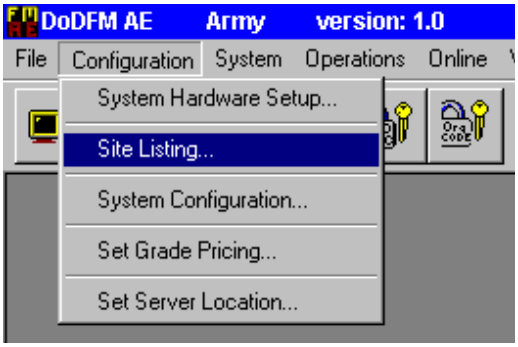


Figure 3-8, Configuration Menu – Site Listing

Selecting the **Site Listing** pull down menu will portray the following screen containing the list of existing previously configured sites or a blank **Site Listing** screen. To open an existing site,

double click on the site or highlight the site and select the *Open* button. To add a new site, enter a new 4-digit alphanumeric character in the Site ID box and select the *New* button.

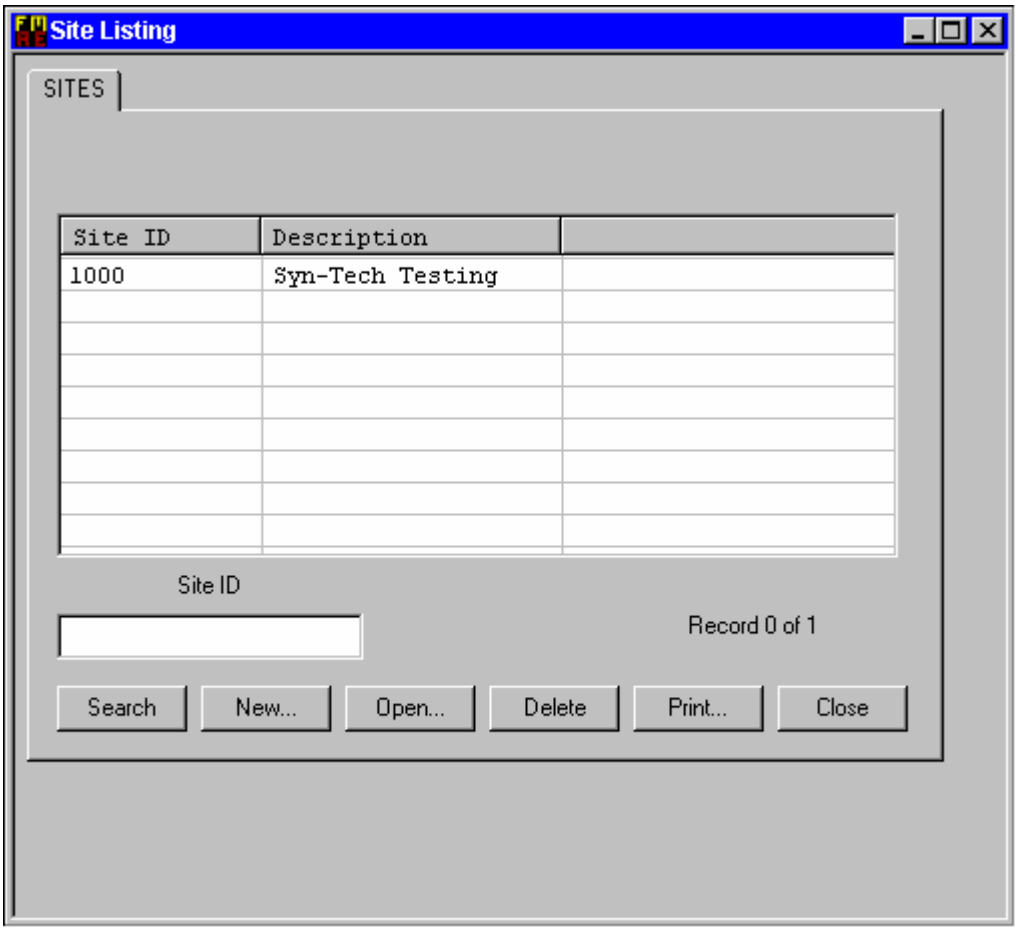


Figure 3-9, Site Listing menu

General Tab

The **General tab** of the Site Configuration menu provides for input of general site specific data. The only mandatory data required is a valid phone number of the Vehicle Identification Reader (VIR)/Fuels Management Unit (FMU) to download transactions. All other data is optional.

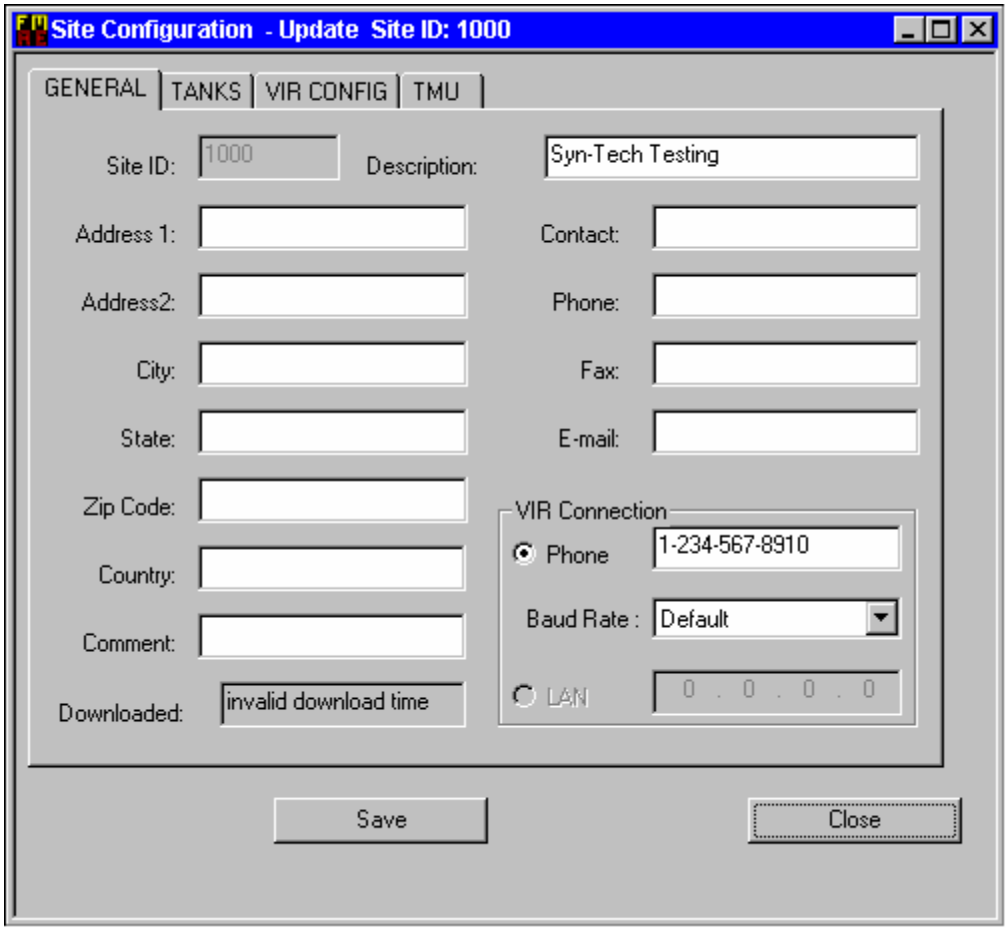


Figure 3-10, Site Listing menu – Site Configuration – General Tab

Tanks Tab

The **Tanks tab** of the Site Configuration menu provides for input of configuration data specific to each tank at the site. To open an existing tank double click on the tank or highlight the tank and select the *Open* button. To add a new tank, enter a new Tank ID (1 to 9999) in the Tank ID box and select the *New* button.

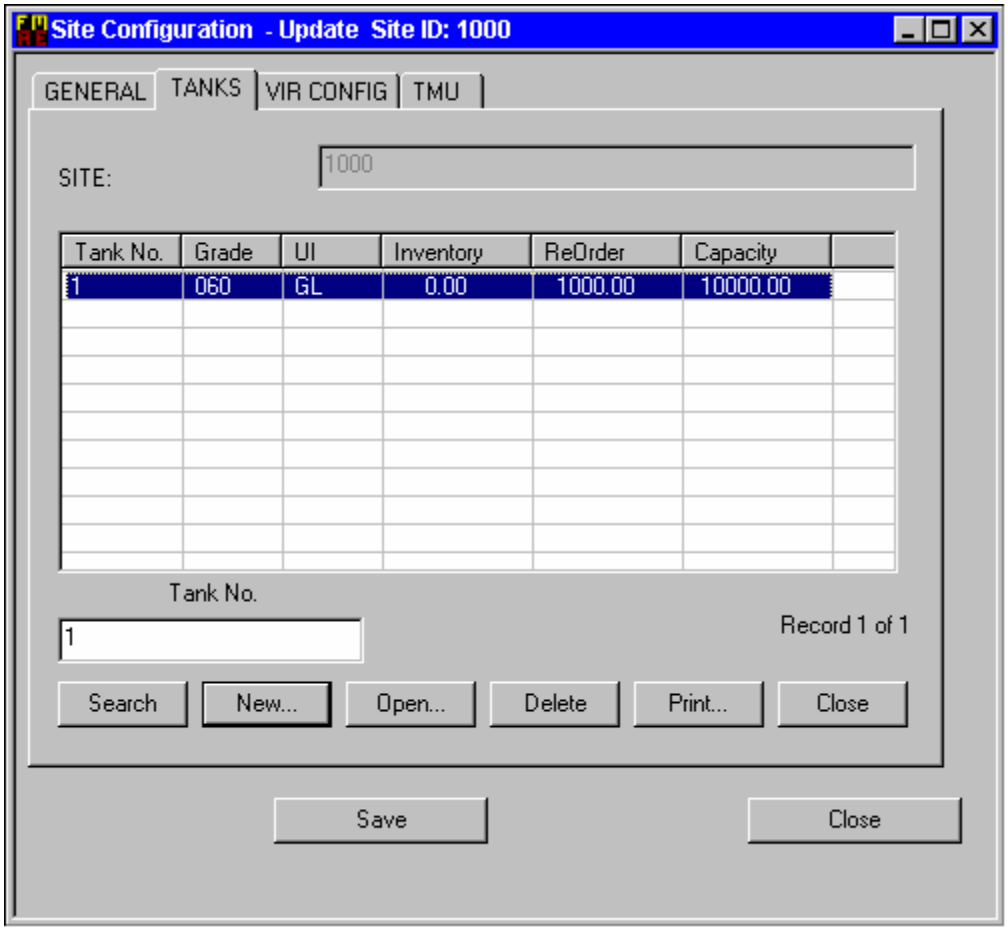


Figure 3-11, Site Listing menu – Site Configuration – Tanks Tab

Tank Information Screen

Once a tank is selected or a new tank input, the user is prompted to input additional data relative to the tank. Enter the tank shell **Capacity**, and **Reorder Limit**. The Reorder Limit is the volume at which stock replenishment is desired. Select the fuel **Grade** code and **Unit of issue** via the combo boxes. Note that only valid DFAMS grade codes can be selected and that the Unit of Issue must be Gallon (GL), Liter (LT) or Quart (QT). For all practical purposes fuel is issued in either gallons or liters only.

If this is the initial setup of a tank, the Current Tank Information data at the bottom of the screen will be annotated with all zeroed data. To input the initial inventory quantity for a tank, select the *Delivery, Adjust* or *Stick* Buttons

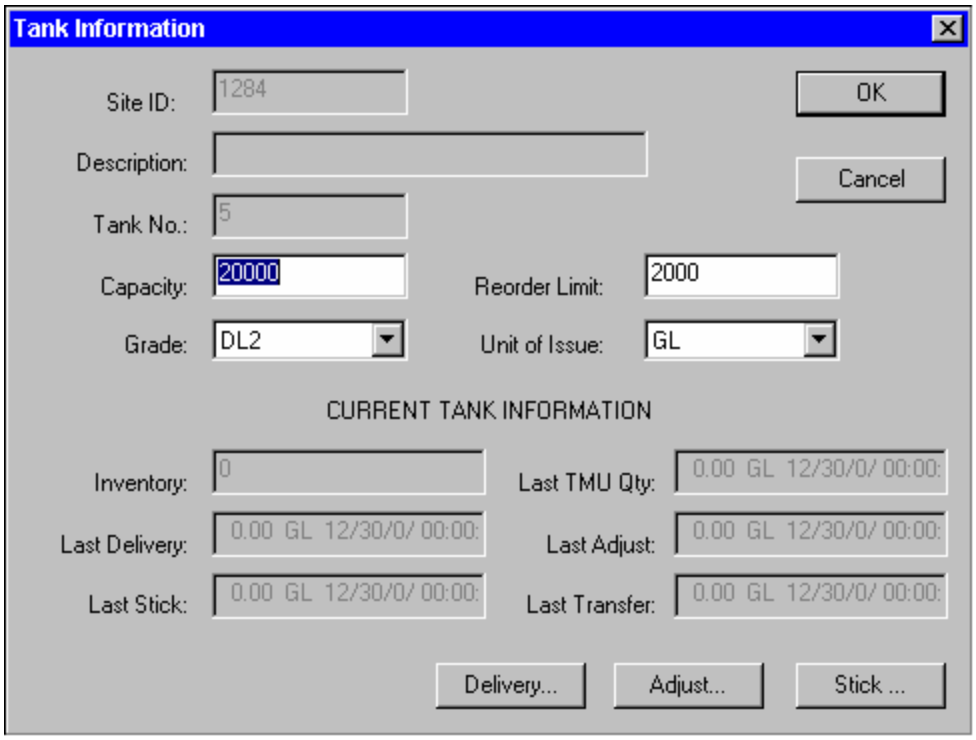


Figure 3-12, Site Listing menu – Site Configuration – Tanks Tab, Tank Information

Tank Delivery Screen

The **Tank Delivery** input screen provides for the input of data relevant to fuel deliveries and receipts. The *Date, Tme* and *Delivery* amount can be selected and comments can be noted relative to the delivery. The *TC VOLUME* is the temperature corrected volume of the receipt. Select OK to complete the delivery. Upon completion of the delivery, note that the Last Delivery field has been updated to reflect the latest delivery information and that the Inventory has been updated.

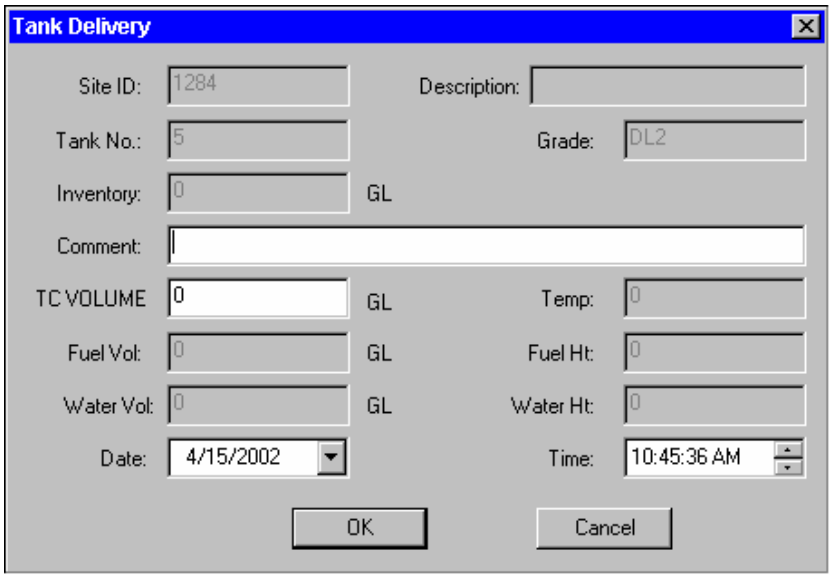


Figure 3-13, Tank Information Screen – Tank Delivery Screen

Tank Adjustment Screen

The **Tank Adjustment** input screen provides for the input of data relevant to fuel adjustments. The *Date, Time* and *Delivery* amount can be selected and comments can be noted relative to the delivery. The *TC VOLUME* is the temperature corrected volume of the receipt. Select OK to complete the delivery. Upon completion of the delivery, note that the Last Delivery field has been updated to reflect the latest delivery information and that the Inventory has been updated.

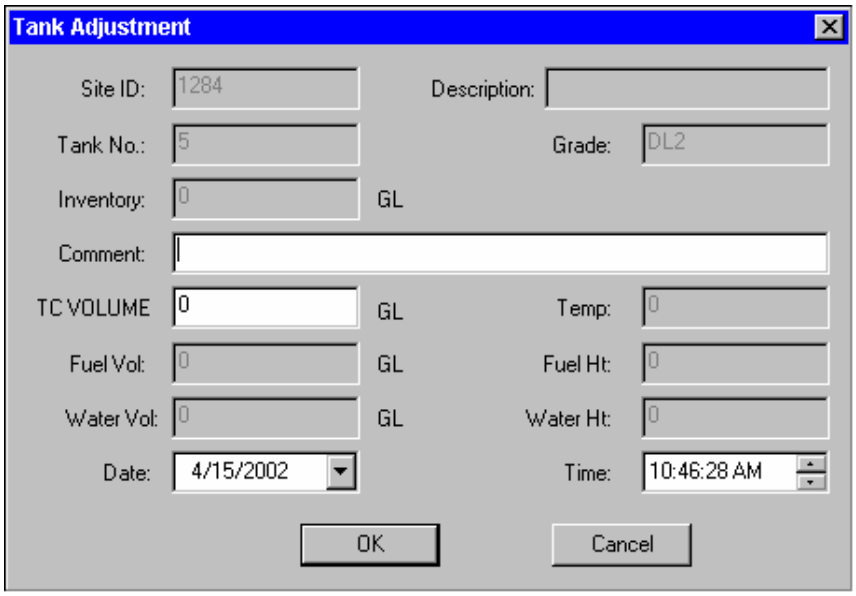


Figure 3-14, Tank Information Screen – Tank Adjustment Screen

Tank Stick Reading Screen

The **Tank Stick Reading** input screen provides for the input of data relevant to manual fuel gauging activities. The *TC VOLUME* is the temperature corrected volume of the gauging activity. The *Fuel* and *Water Vol* (Volume) is the ambient volume of fuel and water relative to the manually gauged stick readings for fuel and water. *Temperature* is the actual fuel temperature recoded for the volume measurement. *Fuel* and *Water HT* (Height) relates to the manually gauged consecutive like fuel and water readings recorded during the gauging activity. The *Date* and *Time* can be selected and *Comments* can be noted relative to the gauging activity.

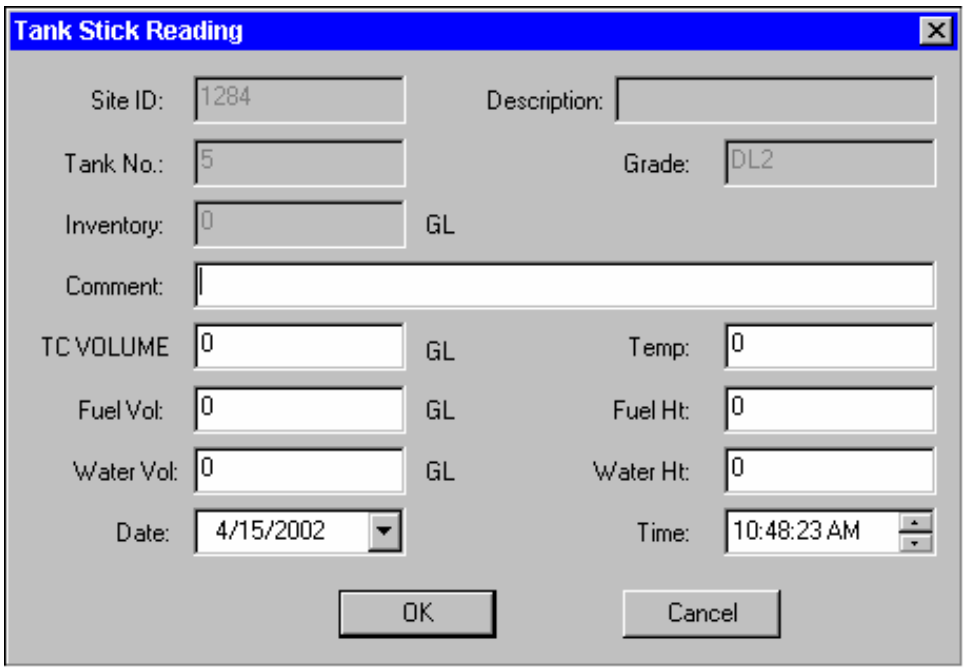


Figure 3-15, Tank Information Screen – Tank Stick Reading Screen

VIR CONFIG Tab

The **VIR CONFIG tab** of the Site Configuration menu provides for input of configuration data specific to each Vehicle Identification Reader (VIR) at the site. There are two ways to configure site VIRs. The site may be configured at the Central Controller, and then the site configuration information may be uploaded to the VIR by selecting the "Upload to FMU" option from the Central Controller database, or the site may be configured at the FMU and then the site information may be "Downloaded From the FMU" by the Central Controller to the Central Controller database. The minimum configuration at a site must contain at least one Master VIR. As such, the Master VIR must be configured first. From the central Controller merely select the *New* button to configure the Master VIR at the site. To open an existing VIR double click on the VIR or highlight the VIR and select the *Open* button. To add a new VIR, select the combo button's down arrow and select a VIR type (Master or Satellite) and then select the *New* button. Each Master VIR can be configured with up to seven (7) additional satellite VIRs for a total of eight (8) VIRs.

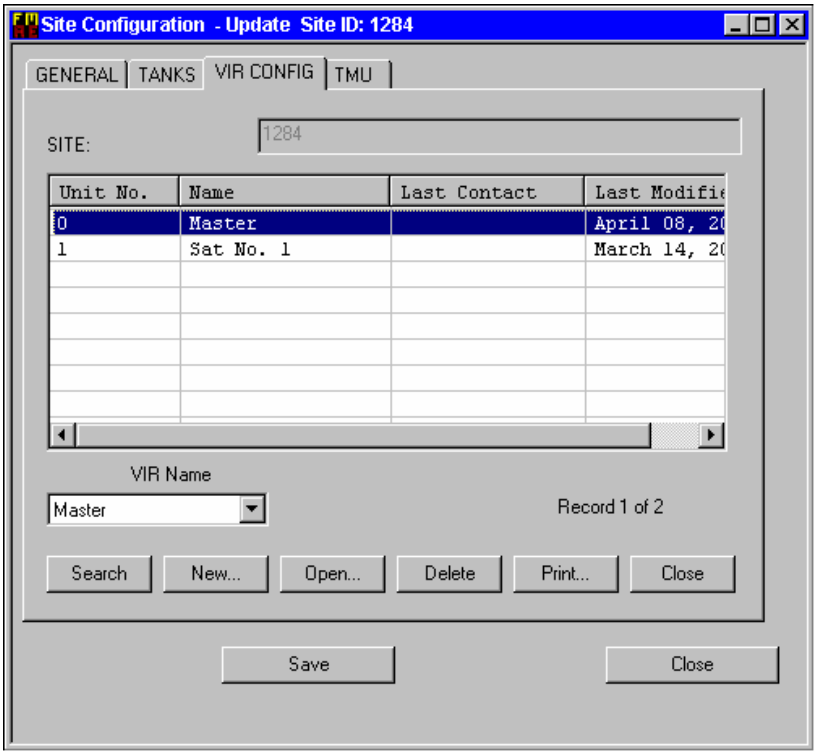


Figure 3-16, Site Configuration – Update Site ID Screen

VIR Configuration Screen – Hose Tab

Once a VIR is selected, the user is prompted to input additional data relative to the VIR. Each of the Pump Letters A–H represent wiring locations. (Most commonly Pump Letters A-H equate to hoses 1-8). The configuration of the unit must match the way it is wired or the FMU will not have control of the correct hose or not look in the correct memory location for pulses from the pulse transmitter. The VIR Configuration screen contains two submenu tabs; HOSE and MISC (miscellaneous). The following descriptions are relevant to the VIR Configuration screen Hose Tab input parameters:

Hose
Each existing hose must be numbered with not more than two numeric digits. Each site must not have any duplicate hose numbers. Leave all non-existing hose locations set to zero.

Prod
The product code setting is provided to allow the use of the older Prokee's that only possessed a product code. Product codes were used primarily for Air Force FMU 2000 systems.

Tank
Select the appropriate tank number from the combo box that supplies fuel to the hose that is being configured. If the tank number is not available, configure the tank first.

Grade
The product grade code is encoded on all new (FMU 2500 or later systems running DoD Advanced software or later) Prokee®'s to permit strict access to the dispenser hoses for the grade of product specified. When the Tank is selected associated grade code that

was configured for that tank is automatically specified. If the grade code is not correct, return to the tank configuration screen and make the necessary correction.

UI
Select the appropriate Unit of Issue (UI) that corresponds to the UI of the dispenser hose selected.

Divide Ratio
Each hose has a pulse transmitter installed in it. This transmitter creates low voltage electrical pulses which the VIR accumulates and uses to determine the volume of fuel dispensed for a given transaction. When these pulses generated they must be converted to a meaningful unit of measure. This conversion is called the divide ratio (i.e., x number of pulses equals x number of units or put another way; 10 pulses = 1 gallon). The numerator and the denominator must be set as there are many different types of pulsers on the market today. The most common found in fuel dispensing equipment are 10:1 and 100:1 depending on the dispenser. The best way to determine the divide ratio is to perform a counts test at the VIR. This test displays the number of pulses created for an observed unit of measure. Refer to product bulletin number 40 for the correct steps to perform this test.

No Pulse Time Out
The no pulse time out is a setting for each hose giving the operator a predetermined number of seconds to begin dispensing fuel. The farther the hose is from the controlling VIR the longer the user will need to set the No Pulse Time Out. This setting can be from 5 to 255 seconds with the most common setting in the range of 30–45 seconds. Keep in mind that having the timer set too long is also a hazard and should be avoided as described in this example: The no pulse time out on a hose is set for 240 seconds, the pulse transmitter has failed on this hose. The user starts a fueling transaction. The VIR is instructed to wait 240 seconds for the user to start pumping. Since the pulser has failed and no pulses are being counted by the VIR, even though the user is getting fuel, four minutes later the dispenser hose shuts off because the VIR thinks nothing was dispensed. In fact, the user did get 4 minutes worth of fuel.

Pump Finish Time Out
This timer is used to terminate a transaction should the user wonder too far from the dispensing hose to keep the transactions from sitting idle or more plainly put; if the timer is set too long one user could fuel and drive away and the next user could pick up the same hose and start dispensing on the previous transaction. The most common setting for the pump finish time out is from 10–20 seconds. The range that it may be set for is from 5–255 seconds.

Phandle
This is a Pump Handle detect setting. Pump Handle detect is determined by the dispenser and how the VIR control wires are connected. When the check box is checked the system would be wired so that only when the pump handle is turned on would the VIR start a transaction and as soon as the handle gets turned off the VIR would terminate the transaction. When the check box is not checked the VIR can start a transaction when the hose is selected and only use the timers (No Pulse Time Out and pump Finish Time Out) to control when to terminate the transaction. This setting depends on the dispenser and how it is wired, the best way to determine how it is wired is to perform the SW test using a Configuration Prokee®. See Site Operations Manual for instructions.

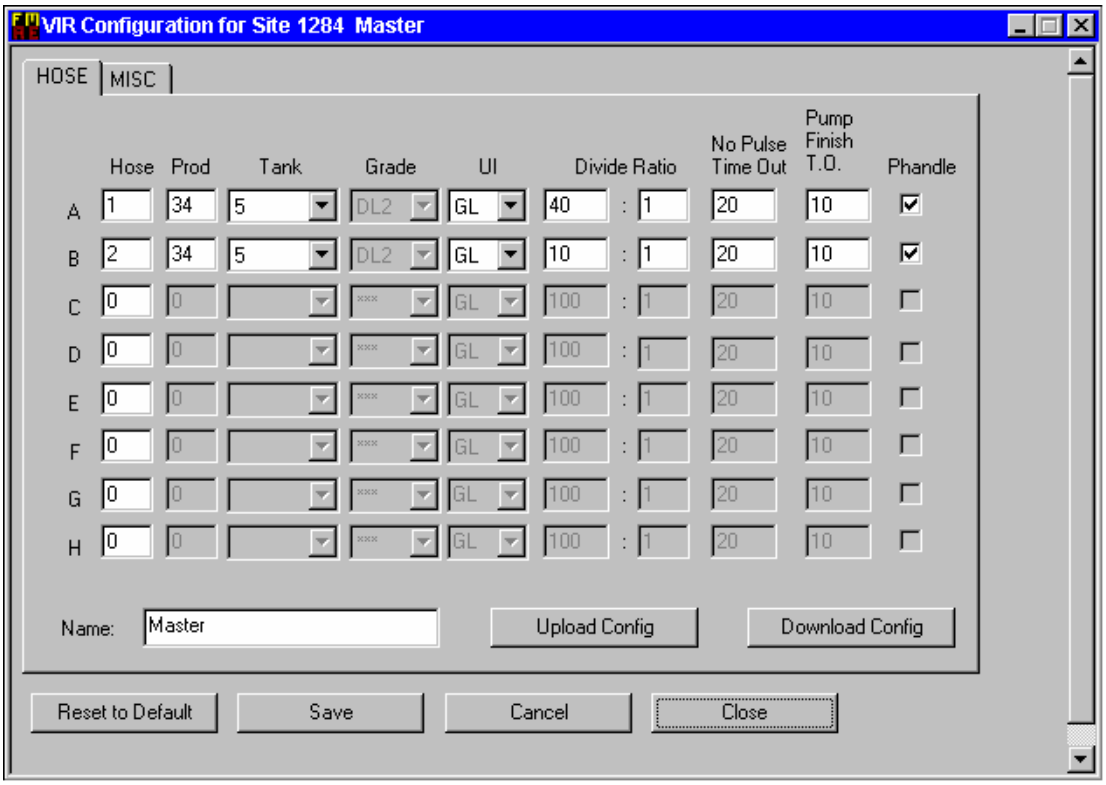


Figure 3-17, VIR Configuration – Hose Tab

VIR Configuration Screen – Misc Tab

The **Misc tab** of the VIR Configuration screen provides for input of configuration data specific to each VIR at the site.

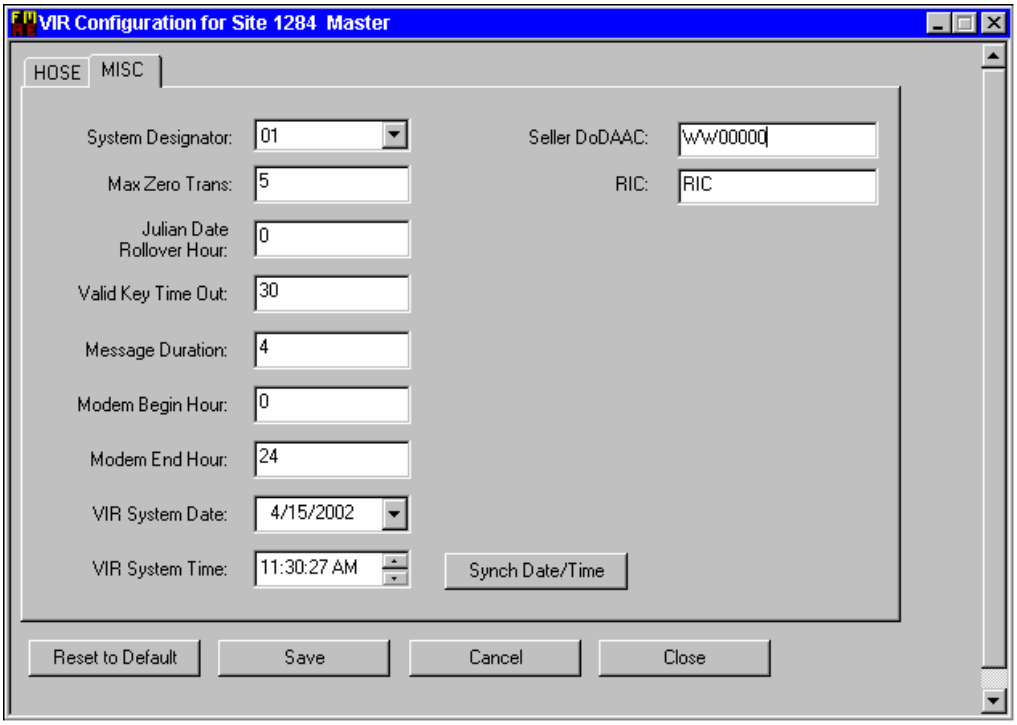


Figure 3-18, VIR Configuration – Misc Tab

The following descriptions are relevant to the VIR Configuration screen – Misc Tab input parameters:

System Designator
(Air Force Use Only) No longer used.

Max Zero Trans
This setting is used as a warning notice should a hose pulser become inoperative. The No Pulse Time Out controls how much fuel a user can get if a pulser fails. This setting controls how many users get fuel if a pulser fails before locking out the hose. For example: If Max Zero Trans is set to 5 it would mean that 5 users could consecutively get fuel for the length of the no pulse time out before the hose would display the message "WARNING. Hose has been shutdown. Contact Supervisor."

Julian Date Rollover Hour
Set the rollover hour for the Julian date. Example; if one wants the new day (date) to begin at 0800 set the rollover to 08, this means that all transactions that occur from midnight to 0800 will be dated with the previous days date.

Valid Key Time Out
This value is defined as the amount of time allotted between initial insertion of a Prokee® to begin a transaction at the FuelMaster® and the start of dispensing fuel. This value must take into consideration the number of prompts that require a keypad response from the user before fueling. This field supports from 5 to 255 seconds. The most common setting is 30 to 45 seconds. This field needs to be long enough to handle the largest amount of entry required, but not too long or problems may result.

Message Duration
The VIR will display various messages. This timer determines how long they will be displayed. The most common setting is 4 seconds. It may be set anywhere from 1–10 seconds.

Modem Begin Hour & Modem End Hour
These two fields control when the VIR will respond to modem communications with the Central Controller program. The VIR modem will only answer the phone between the beginning hour to the ending hour. These values should be entered in military time. The most common setting is 0–24.

EXAMPLES: 0-24 means the FMU answers all the time
7-9 means the FMU answers only between 7 AM and 9AM
17-19 means the FMU answers only between 5 PM and 7 PM.

Note
When the VIR answers the modem (phone), there is an exchange of passwords that prevents un-authorized connection to the VIR.

Note
The VIR date and time will not change automatically in response to daylight savings time.

VIR System Date & VIR System Time
This date and time is used when recording transactions and messages. To send the PC's Date and Time to the VIR **<Click>** on the Synch Date/Time button. If a site has

more than one VIR, for example a master VIR and a satellite VIR, the satellites will receive their date and time automatically from the master VIR.

Note

Now that the VIR Configuration has been completed and Saved, it must be sent (uploaded) to the respective VIR's.

- To send the configuration in the Central Controller to the VIR, return to the Hose tab and **<Click>** the "Upload Config" button and the configured data will be sent to the VIRs.

- To retrieve the configuration currently configured in a VIR, **<Click>** the "Download Config" button and the data currently being used by a VIR will be transferred from that VIR to the Central Controller overwriting the configuration data contained in Central Controller.

Note

If the master VIR has the appropriate hardware and the tank monitor interface wiring has been completed, continue with this part of setup.

TMU Tab

The **TMU tab** (Tank Monitor Unit) of the Site Configuration menu provides for selection of reports to be downloaded when the TMU is polled. Note that the list of reports varies depending upon the type of TMU selected.

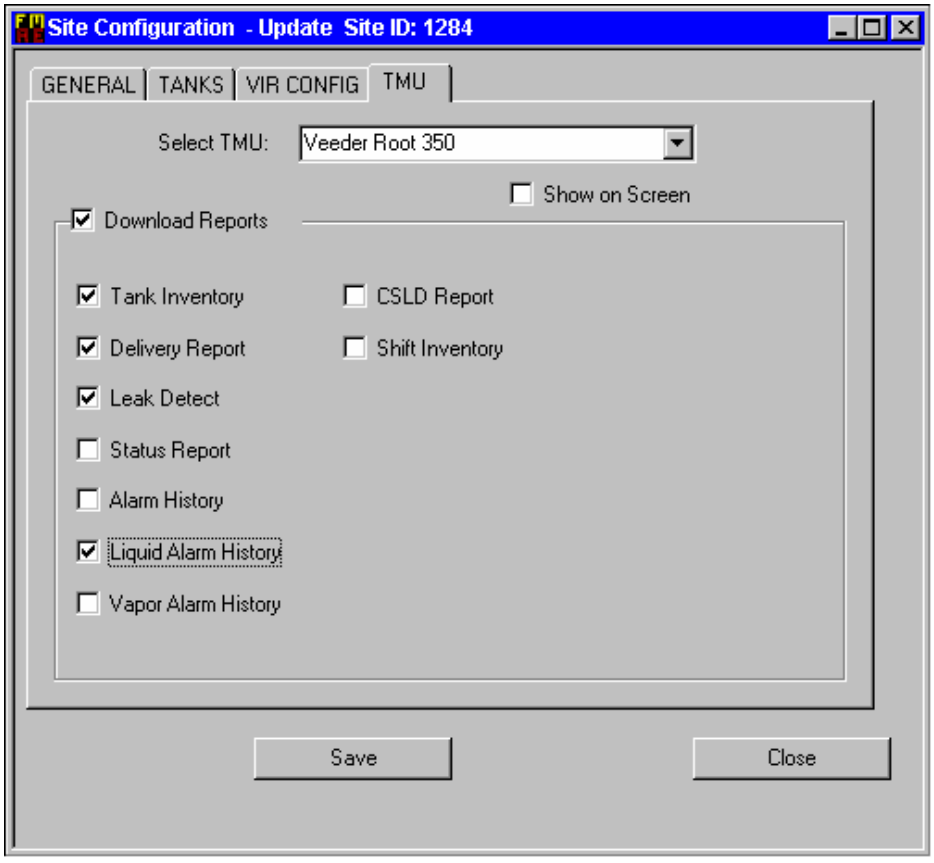


Figure 3-19, Site Listing menu – Site Configuration – TMU Tab

Checking the Download Reports check box will activate the specific report check boxes. Check each box for which a report is required. Each time the TMU is dialed each report checked will be downloaded and saved. To reports on screen when they are downloaded, check the Show on Screen check box.

System Configuration

The System Configuration screen provides for the input of data relative to the base. Data input here is used for report headings and encoding configuration screens. Some data are used for shipping of replacement parts, if required. Gain access to this menu by clicking on the Configuration pull down menu and selecting System Configuration as shown below.

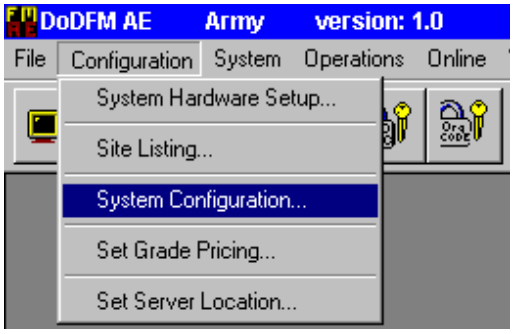


Figure 3-20, Configuration Menu – System Configuration

Selecting the **System Configuration** pull down menu will portray the following screen.

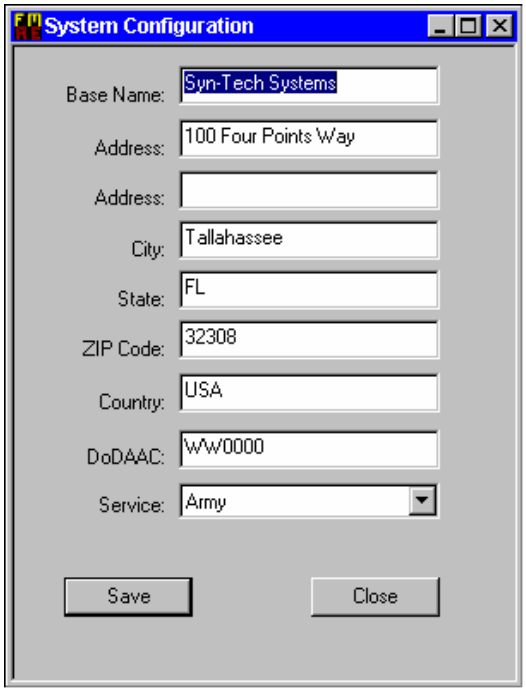


Figure 3-21, System Configuration Screen

Input the necessary data as depicted on the screen. In the Service combo box select the appropriate branch of service.

Set Grades Pricing

The **Set Grades Pricing** screen permits the user to input the unit price of fuel by grade code.

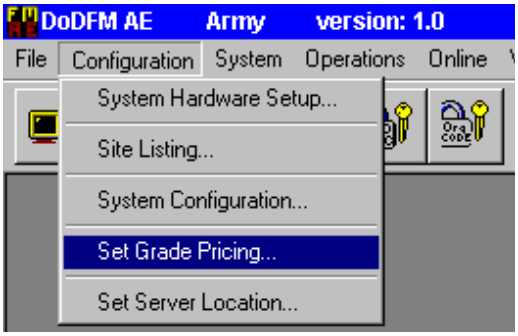


Figure 3-22, Configuration Menu – Set Grade Pricing

Using the Grades pull down menu select each of the grades that will be used and assign an appropriate Unit Price. Save each price entered. Close to finish.

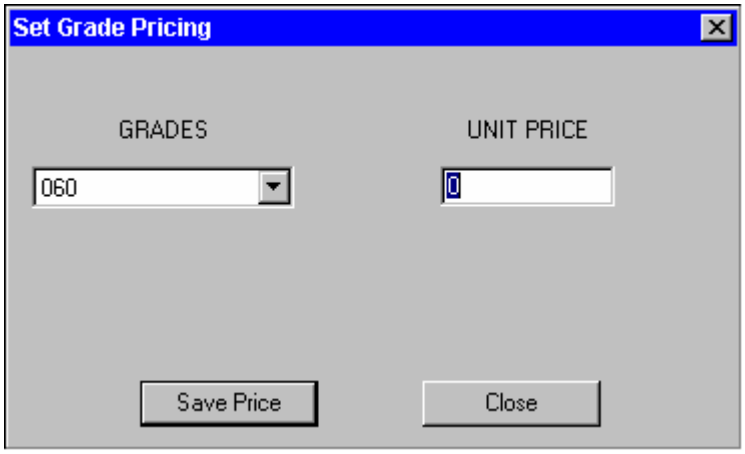


Figure 3-23, Set Grades Pricing

Using the Grades pulldown menu select each of the products that will be used and assign an appropriate cost per unit. **<Click>** Save for each price entered. **<Click>** Close to finish.

System Menu

The System Menu pull down menu provides access to Database Utilities, Export Configuration features, User Maintenance for password protection and user access and the FuelMaster on-line service.

DB Utilities

The DB (database utilities) pull down menu provides the capability to: Recover Export Records, Repair the DoDFM AE Database, Compact the DoDFM AE Database, Archive Records and Restore Archived Records. Gain access to the DB Utilities menu by clicking on the System pull down menu and selecting DB Utilities as shown below.

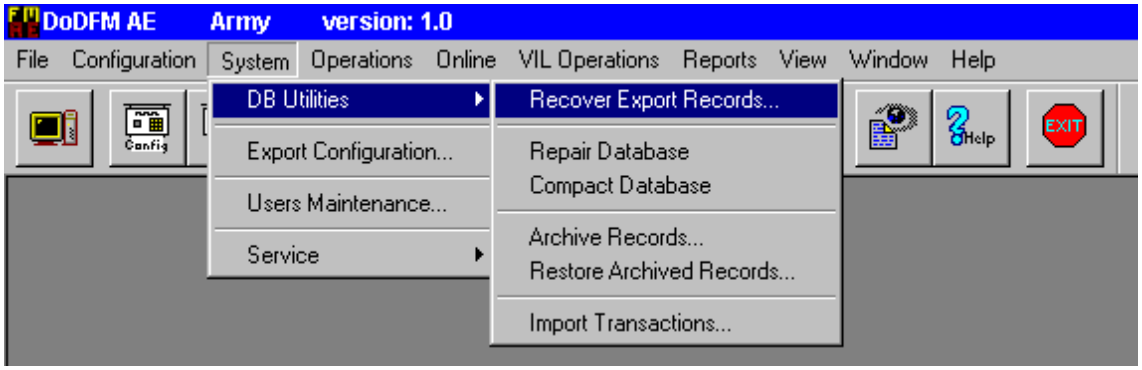


Figure 3-24, DoDFM AE Main Menu – DB Utilities – Recover Export Records

Recover Export Records

To recover records that have already been exported to another system, select the Recover Exported Records selection from the DB Utilities menu.

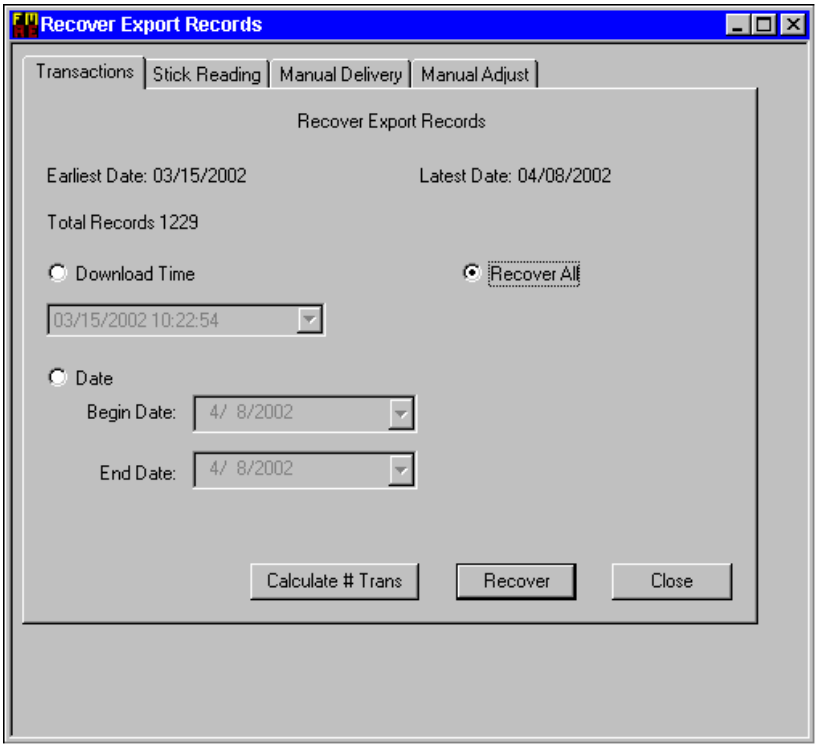


Figure 3-25, Recover Export Records Menu

There are four types of recoverable records: Transactions, Stick Readings, Manual Delivery and Manual Adjust (Adjustments). Each of the four types of recoverable records can be recovered by a specific date or date range or by all (Recover All) of the type of record selected. In addition, only Transactions can be recovered by a third method, Download Time.

The Earliest and Latest Dates displayed in the top portion of the screen depict the date ranges of the available transactions. The date ranges can change depending upon the type of transaction selected.

Recover by Download Time.

The Download Time method of recovery is most advantageous for locations possessing multiple sites (Master FMU's) where the transactions from those sites are saved to a single download (VILTransactions.prn) file. Check the Download Time check Box; select a recorded download time from the Download Time combo box and <click> Recover.

Recover by Date.

Use to recover records for a single date or records that span multiple days. Check the Date check Box; select the record download date(s) from the Begin Date and End Date combo boxes and <click> Recover.

Recover All.

When all of a specific type of record (Transactions, Stick Readings, Manual Delivery and Manual Adjust) need to be recovered <click> the Recover All radio button. Selecting Recover All will recover ALL RECORDS from the first record saved in the database to the most recent. Check the Recover All check Box, and <click> Recover.

Calculate # Trans (Transactions)

Press the Calculate # Transactions button to provide an accurate count of the number of transactions for a specific type that will be recovered. These transactions will be written to the export file VILTransactions.prn. Select the Calculate # Trans button to display the number of transactions available based upon the recovery method selected (Date, All or Download Time).

Once the Recover button is selected the following screen will be displayed indicating that the selected records have been successfully restored.

Figure 3-26, Successfully Restored Records Screen

Repair Database/Compact Database

To Repair/Compact the DoDFM AE Database records select the System pulldown menu, Highlight DB Utilities and, select Repair or Compact database. This is an automatic function and upon completion FuelMaster® will display a successful completion message as depicted below:

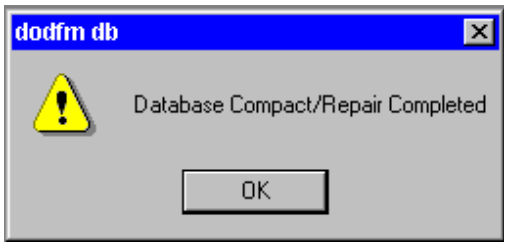


Figure 3-27, Repair/Compact Database Completed Screen

Each month the DoDFM AE program will display a message prompting the user to perform database maintenance. The function of database maintenance entails repairing and/or compacting the database and archiving records that are no longer required to actively available.

Archive Records

To Archive DoDFM AE Database records select the System pulldown menu, Highlight DB Utilities and, select Archive Records. Selecting Archive Records will move the records selected under the applicable tab (Transactions, Messages, Totalizer or Delivery) from the main database table to an archived database table; thus providing quicker access to records available in the main database table.

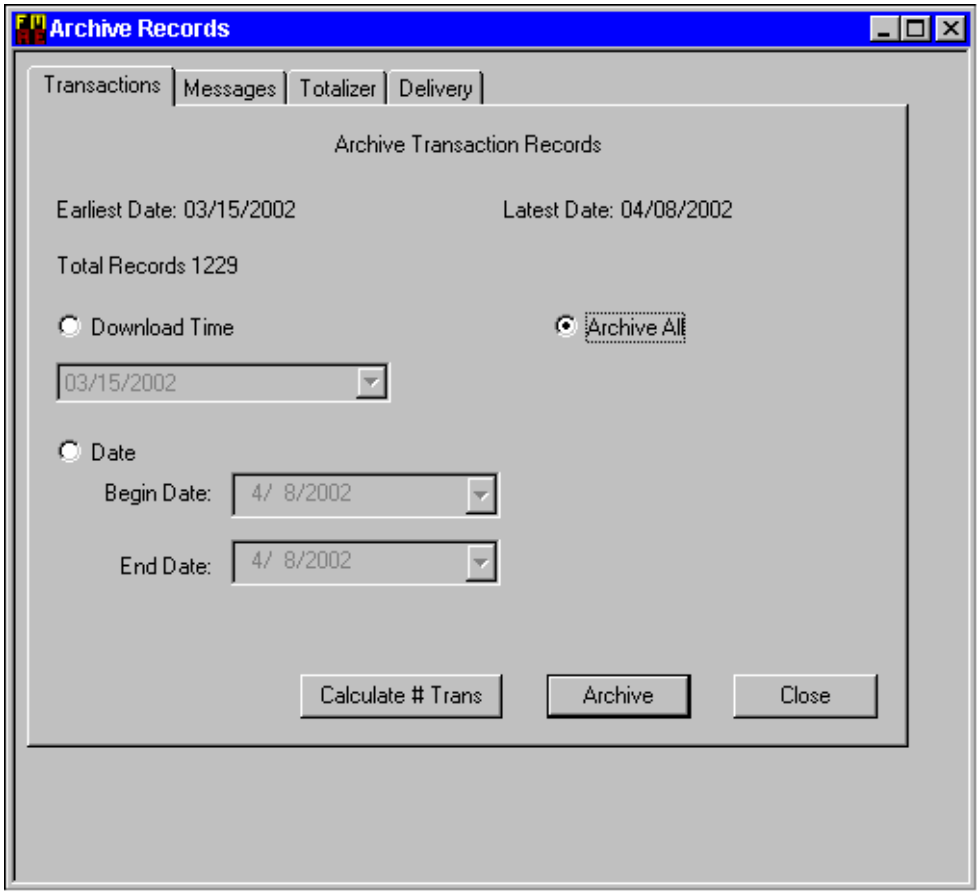


Figure 3-28, Archive Records Screen

There are four types of records that can be archived: Transactions, Messages, Totalizer and Delivery. Each of the four types of records can be archived by a specific date or date range, by all (Archive All) of the type of record selected or by Download Time.

The Earliest and Latest Dates displayed in the top portion of the screen depict the date ranges of the available transactions that can be archived. The date ranges can change depending upon the type of transaction selected.

Archive by Download Time.
The Download Time method of archiving is most advantageous for locations possessing multiple sites (Master FMU's) where the transactions from all of the sites can be archived at once. Check the Download Time check Box; select a recorded download time from the Download Time combo box and <click> Archive.

Archive by Date.
Use to Archive records for a single date or records that span multiple days. Check the Date check Box; select the record download date(s) from the Begin Date and End Date combo boxes and <click> Archive.

Archive All.
When all of a specific type of record (Transactions, Messages, Totalizer and Delivery) needs to be archived <click> the Archive All radio button. Selecting Archive All will Archive ALL RECORDS from the first record saved in the database to the most recent. Check the Archive All check Box, and <click> Archive.

Calculate # Trans (Transactions)
Press the Calculate # Transactions button to provide an accurate count of the number of transactions for a specific type that will be archived. Select the Calculate # Trans button to display the number of transactions available based upon the archive method selected (Date, All or Download Time).

Once the Archive button is selected the following screen will be displayed indicating that the selected records have been successfully archived. The named of the archived file is provided constructed as transaction type.date.download.date time.archive.mdb. <transactions.20011107.download.20011107 194950.archive.mdb> equates to transaction records downloaded November 7, 2001 and archived November 7, 2001 at 19:49:50 hours. From the file name the content can be determined so that if and when it becomes time to Restore Archived Records the needed records can be selected by reading the file names. If the archive were by date the name would appear as:

<transactions.yyyymmddtoyyyymmdd.dates.yyyymmdd hhmm.archive.mdb>

Figure 3-29, Successfully Archived Records Screen

Restore Archived Records

To Restore Archived Records select the System pull down menu, Highlight DB Utilities and, select Restore Archived Records. Selecting Restore Archived Records will move the records from the database selected under the applicable tab (Transactions, Messages, Totalizer or Delivery) from the archived database table back to the main database table; thus providing access to records.

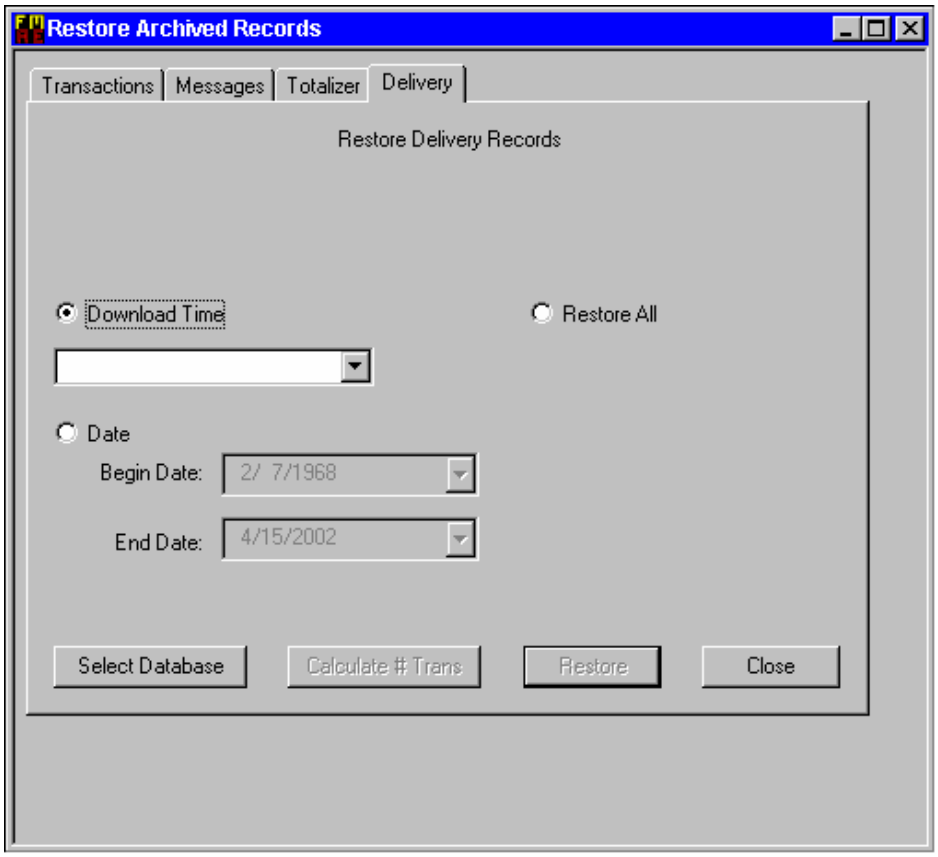


Figure 3-30, Restore Archived Records Screen

There are four types of records that can be Restored: Transactions, Messages, Totalizer and Delivery. Each of the four types of records can be restored by a specific date or date range, by all (Restore All) of the type of record selected or by Download Time.

Restore by Download Time

The Download Time method of restoring records is most advantageous for locations possessing multiple sites (Master FMU's) where the transactions from all of the sites for a specific date can be restored at once. Check the Download Time check Box; select a recorded download time from the Download Time combo box and <click> Restore.

Restore by Date

Use to Restore records for a single date or records that span multiple days. Check the Date check Box; select the record download date(s) from the Begin Date and End Date combo boxes and <click> Restore.

Restore All

When all of a specific type of record (Transactions, Messages, Totalizer and Delivery) needs to be restored <click> the Restore All radio button. Selecting Restore All will restore ALL RECORDS from the first record archived in the database to the most recent. Check the Restore All check Box, and <click> Restore.

Calculate # Trans (Transactions)
Press the Calculate # Transactions button to provide an accurate count of the number of transactions for a specific type that will be restored. Select the Calculate # Trans button to display the number of transactions available based upon the restore method selected (Date, All or Download Time).

Select Database
Depressing the Select Database button will display the below screen listing all files containing previously archived records. Highlight the database to be restored, and <click> Open. The Restore Archived Records screen will momentarily display the record count to be restored and the Earliest and Latest Dates will be displayed in the top portion of the screen depicting the date ranges of the available transactions that can be restored. The date ranges can change depending upon the type of transaction selected.

Once the Restore button is selected the following screen will be displayed indicating that the selected records have been successfully restored. The name of the restored file is provided constructed as: transaction type.date.download.date time.archive.mdb. <transactions.20011107.download.20011107 194950.archive.mdb> equates to transaction records downloaded November 7, 2001 and archived November 7, 2001 at 19:49:50 hours. From the file name the content can be determined so that if and when it becomes time to Restore Archived Records the needed records can be selected by reading the file names. If the archive were by date the name would appear as:

<transactions.yyyymmddtoyyyymmdd.dates.yyyymmdd hhmm.archive.mdb>

Figure 3-31, Successfully Restored Records Screen

Export Configuration

The Export Configuration pull down menu provides the capability to select different export configurations. This capability provides FuelMaster the flexibility to export like data as different export files/data structures. Gain access to the Export Configuration menu by clicking on the System pull down menu and selecting Export Configuration as shown below.

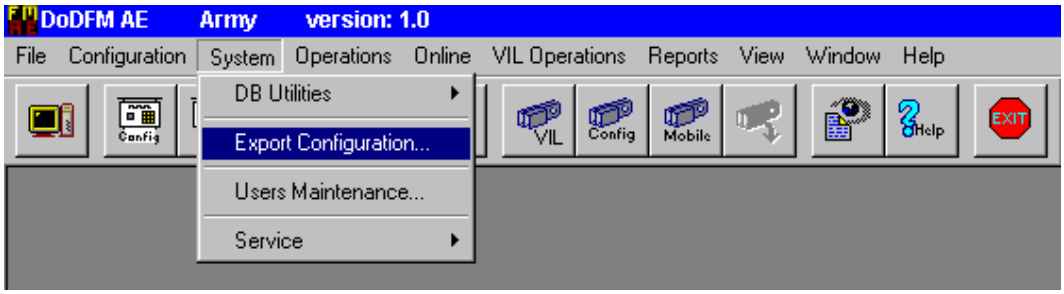


Figure 3-32, System Menu – Export Configuration

Export Configuration currently supports these export types:

FAS - Exports transactions to a single viltransactions.prn file. Exporting ***overwrites*** the file each time an export is done.

FAS Append - Exports transactions to a single viltransactions.prn file. Exporting ***appends*** the file each time an export is done.

Separate Sites - Creates a separate "viltransactions SITE *sitename*.prn" file for each site's exported transactions. Exporting ***overwrites*** the file each time an export is done.

Transactions are exported to the default directory set in the Export Configuration menu. Here the default is shown as an example:
"C:\Program Files\SynTech\DoDFM AE\transactions\...".

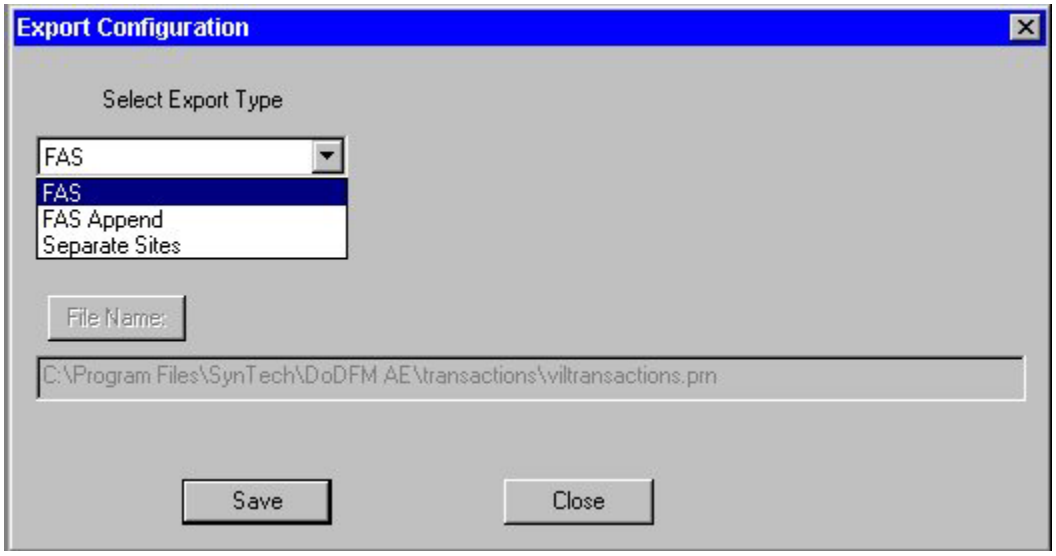


Figure 3-33, Export Configuration Screen

User Maintenance

The User Maintenance pull down menu provides the capability to assign User Ids and passwords to individuals, permitting different individuals different access rights. In addition, certain privileges can be granted to limit operations that a person can perform or full control (administrative privileges) to all facets of the program may be granted.

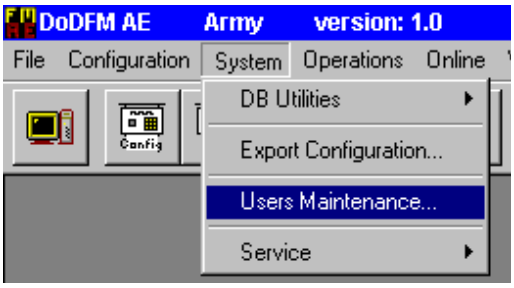


Figure 3-34, System Menu – User Maintenance

Select the User Maintenance pull down menu to display the User Listing screen. The User Listing screen provides a listing of all users currently authorized to access the DoDFM AE program.

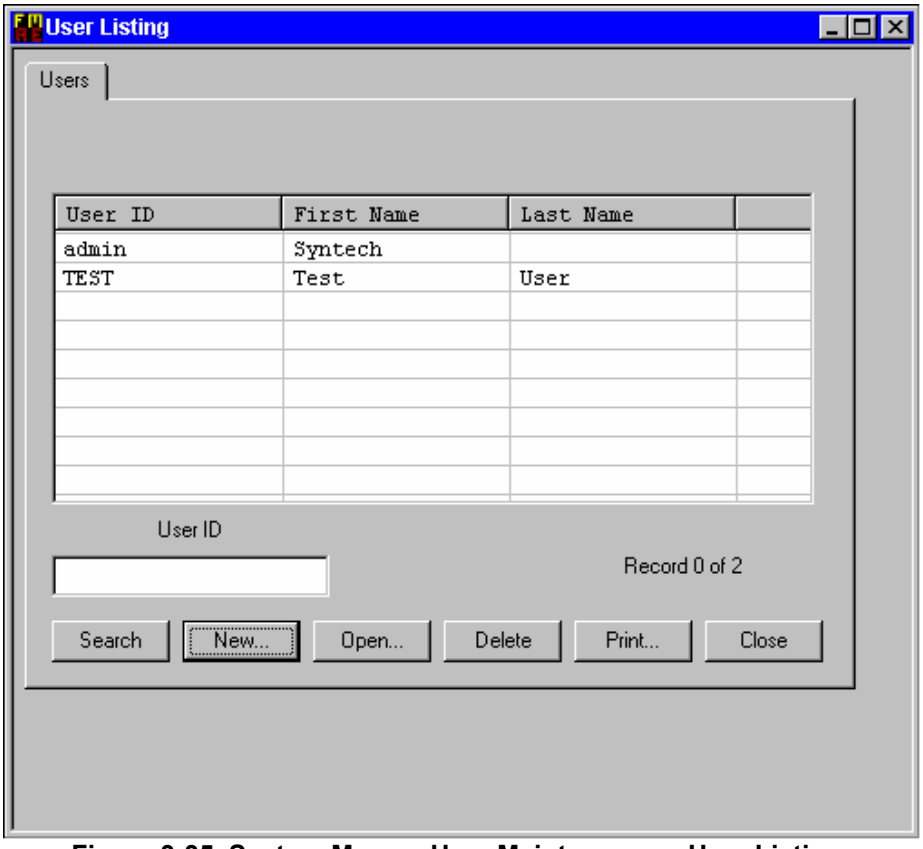


Figure 3-35, System Menu – User Maintenance – User Listing

To open a User ID <click> on the User ID to highlight it and select the Open button or double <click> on the User ID, or to add a new User ID, enter up to a new 8-digit alphanumeric User ID in the User ID Box and <click> New. The following screen is displayed.

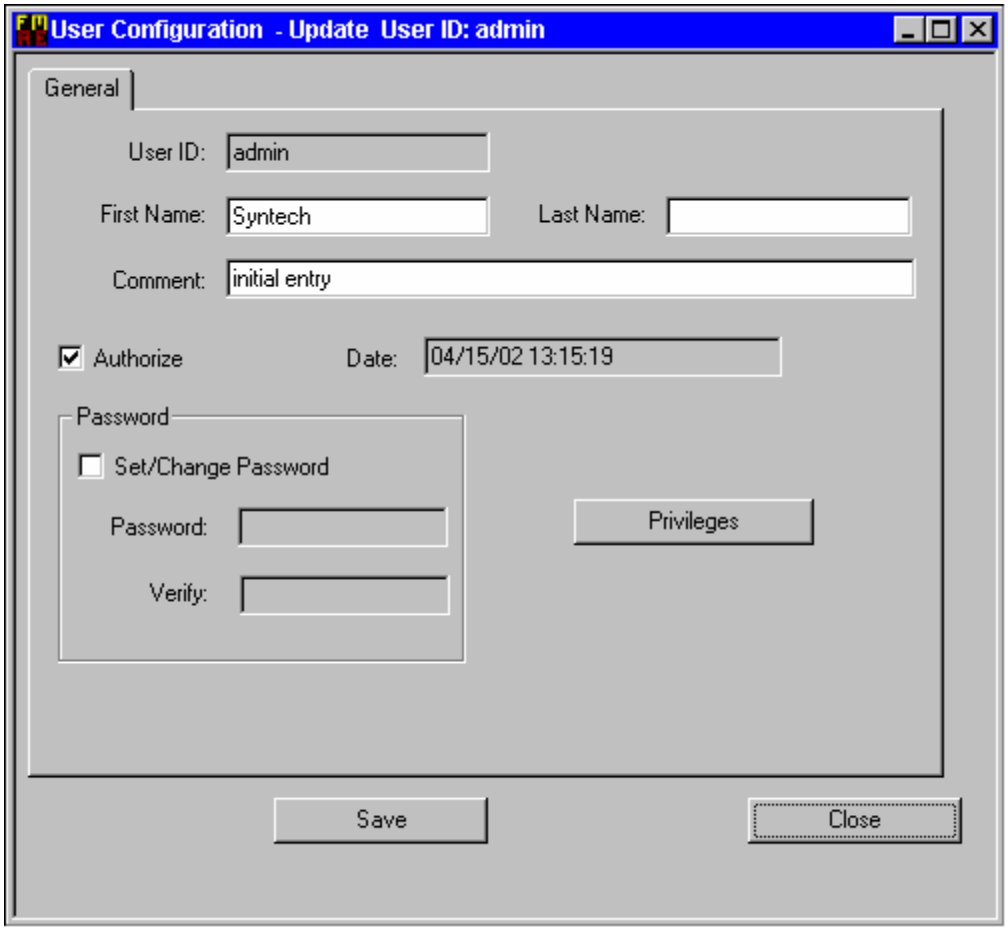


Figure 3-36, System Menu – User Maintenance – User Listing – User Configuration

The User Configuration Window allows both new User ID information to be entered and existing information to be edited. Use the two check boxes to Authorize a user and to Set/Change the user's Password. The Password is case sensitive and must be entered twice exactly the same. The Date window will reflect the latest date and time that a user was authorized or not authorized. Click the Privileges button to continue.

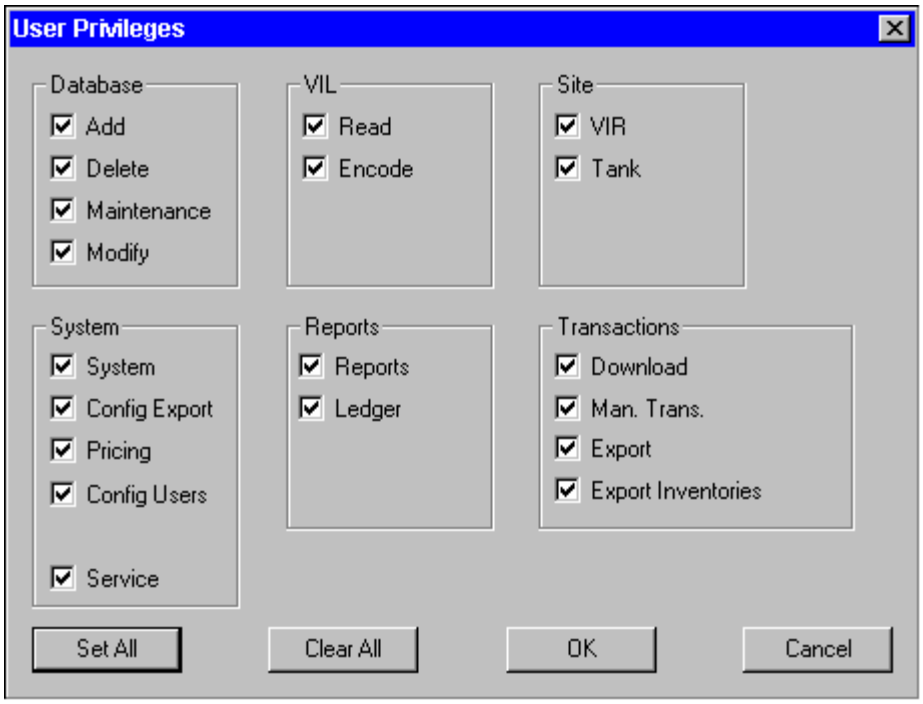


Figure 3-37, System Menu – User Maintenance – User Listing – User Configuration - User Privileges

In the User Privileges window contains 19 active check boxes and one inactive check box where privileges may be granted. The check boxes may be selected individually or all check boxes can be checked simultaneously by <clicking> the Set All button. <Click> the OK button when finished and <click> the Save button on the User Configuration screen to save the User Privileges.

Service (FuelMaster NT Service)

The Service pull down menu provides the capability to Install, Run, Stop and Uninstall the FuelMaster NT Service. The service installs a file named “SynDoDAEService.exe”.

- For SynDoDAEService to operate it must first be installed, and then it must be run (i.e., <click> Install and then <click> Run). Note that the SynDoDAEService can be installed during the DoDFM AE installation process.
- To stop the operation of SynDoDAEService <click> Stop.
- To un-install SynDoDAEService, <click> Uninstall.

There will be no acknowledgement from DoDFM AE that the requested operation was or was not successful.

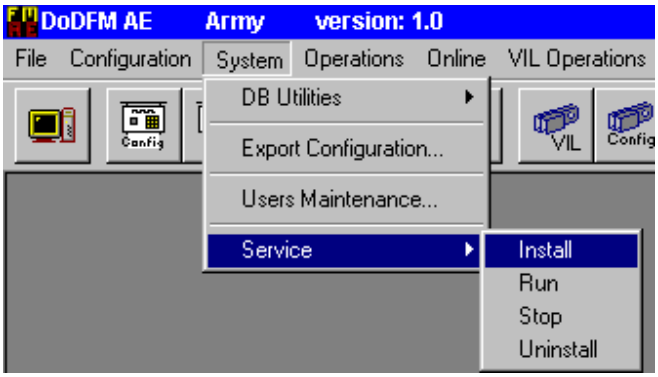


Figure 3-38, System Menu – Service

SynDoDAEService controls the Autodownload features of DoDFM AE as defined by the selections in the Online pull down menu's Download window and its Schedule button. For the SynDoDAEService to Run:

- The SynDoDAEService must be installed
- The desired options must be selected on the Download and Schedule Download Windows, and
- The Save Auto Options Button must have been selected.

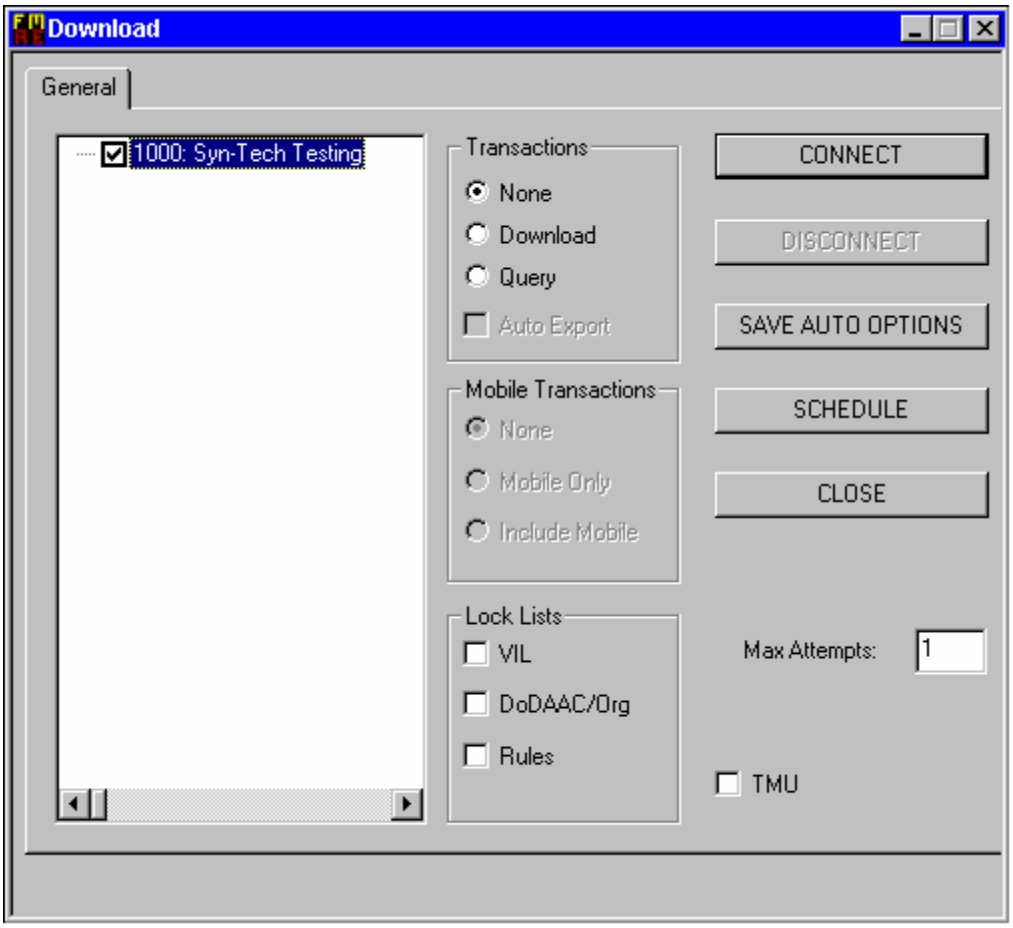


Figure 3-39, Download Menu – Download Screen

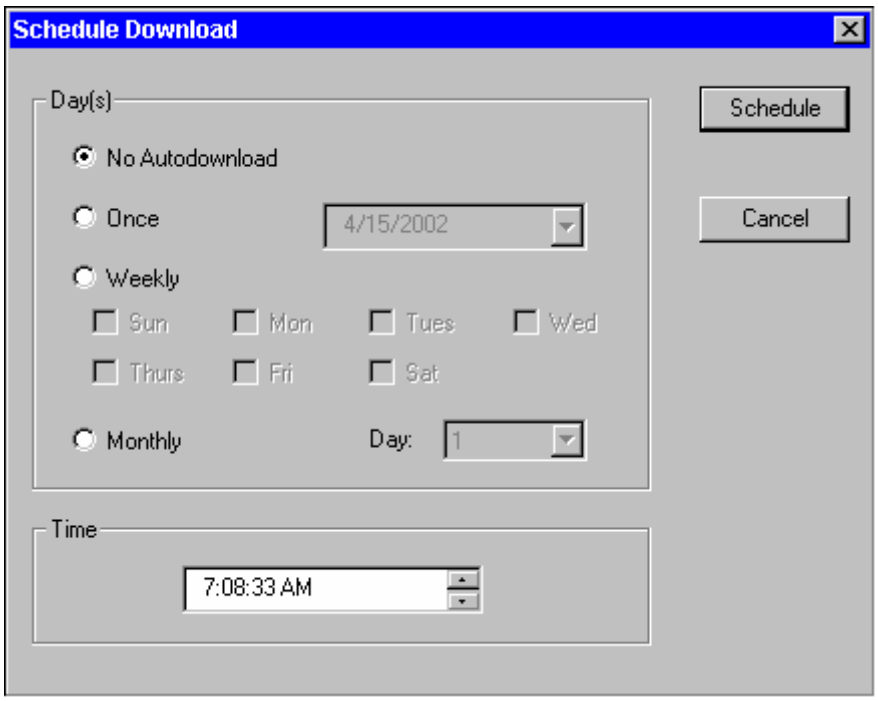


Figure 3-40, Download Menu – Download Screen – Schedule Download Window

Once these operations have been performed, in the stated sequence, the FuelMaster NT Service will automatically perform the tasks as defined in the two windows at the time the Save Auto Options buttons was selected.

If the FuelMaster NT Service is installed and running, the Service will automatically stop running when the DoDFM AE program is started and will automatically restart when the DoDFM AE program is exited.

Operations Menu

Export Transactions

The Export Transactions pull down menu provides the capability to manually export all un-exported transactions from the DoDFM AE database into an export file format. In this case, they are exported into a file format compatible with the Fuels Automated System (FAS). Selecting this option will copy all previously un-exported transactions into files located in C:\Program Files\SynTech\DoDFM AE\transactions folder: The files copied are:

- viltransactions.manual inventory
- viltransactions.dodaac lock
- viltransactions.org lock
- viltransactions.prn
- viltransactions.vil encoded
- viltransactions.vil lock

From the DoDFM AE desktop, <click> on the Operations pull down menu and <click> Export Transactions

Figure 3-41, DoDFM AE Main Menu – Export Transactions

Selecting Export Transactions will prompt the user to confirm that they want to export transactions and lists. Depress the Yes button to proceed.

Figure 3-42, Export Transactions Pop Up Window

DoDFM AE displays a pop up menu indicating that the export was completed. In addition, the program will notify the user of any transactions that were not exported because of their absence in the database. The transactions are exported based on the setting in Export Configuration in the System menu. The default location where transactions are placed is: C:\Program Files\SynTech\DoDFM AE\transactions.

Figure 3-43, Export Complete Pop Up Window

Export Manually Entered Inventory Changes

The Export Manually Entered Inventory Changes pull down menu provides the capability to manually export only un-exported manually entered inventory changes. Those transactions would include stick readings, fuel deliveries and inventory adjustments. From the DoDFM AE desktop, <click> on the Operations pull down menu, select Export Manually Entered Inventory Changes.

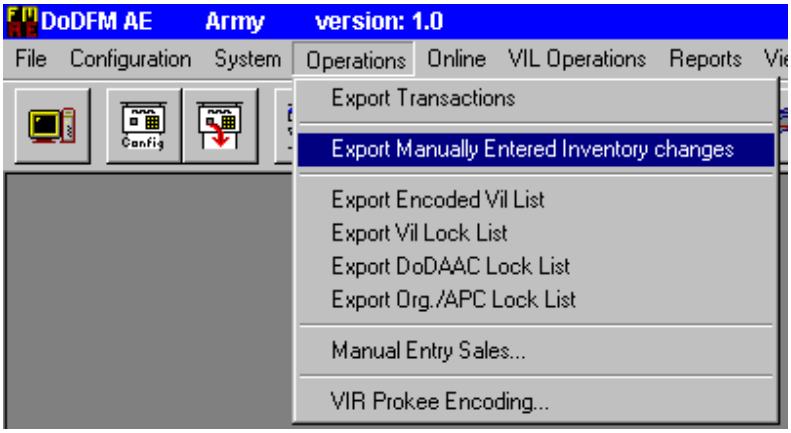


Figure 3-44, DoDFM AE Main Menu – Export Manually Entered Inventory Changes

Selecting Export Manually Entered Inventory Changes will prompt the user to confirm that they want to export manually entered inventory changes. Depress the Yes button to proceed.

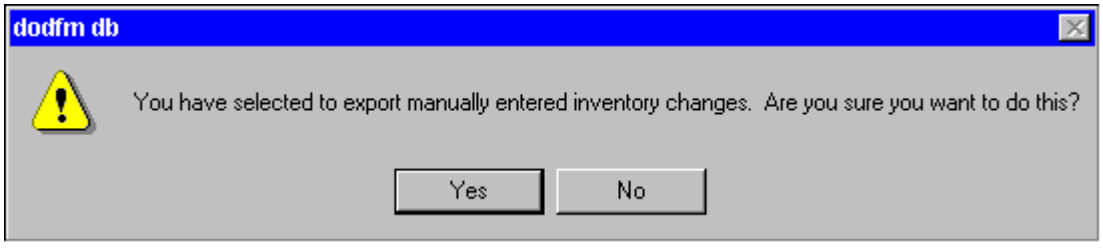


Figure 3-45, Export Manually Entered Inventory Changes Pop Up Window

DoDFM AE displays a pop up window indicating that the manual inventory list was created. The manual inventory list is stored in and entitled C:\Program Files\SynTech\DoDFM AE\transactions\viltransactions.manual inventory.

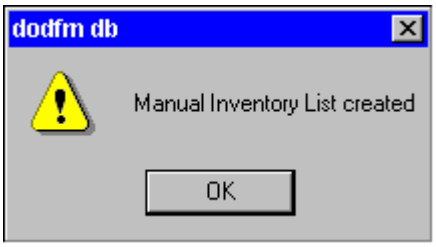


Figure 3-46, Manual Inventory List Completed Pop Up Window

This selection will create a Manual Inventory List. The list is stored in and titled:C:\Program Files\SynTech\DoDFM AE\transactions\viltransactions.manual inventory.

Export Encoded VIL List

The Export Encoded VIL List pull down menu provides the capability to manually export only un-exported VILs that have been encoded. This options is used to export a list of encoded Vils to another system. From the DoDFM AE desktop, <click> on the Operations pull down menu, select Export Encoded VIL List.

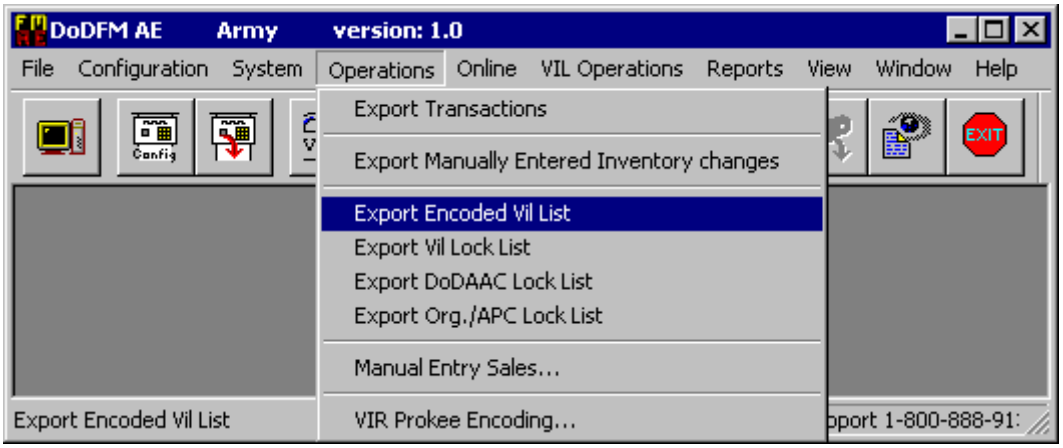


Figure 3-47, DoDFM AE Main Menu – Export Encoded VIL List

Selecting Export Encoded VIL List will prompt the user to confirm that they want to export the encoded List. Depress the Yes button to proceed.

Figure 3-48, Export Encoded VIL List Pop Up Window

DoDFM AE displays a pop up window indicating that the encoded VIL list was created. The Encoded VIL list is stored in and entitled C:\Program Files\SynTech\DoDFM AE\transactions\viltransactions.vil encoded.

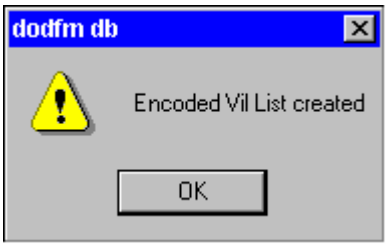


Figure 3-49, Encoded VIL List Created Pop Up Window

Export VIL Lock List

The Export VIL Lock List pull down menu provides the capability to manually export only un-exported VILs that have been locked out by registration number. This option is used to export a list of Vils by registration number to the VIR. From the DoDFM AE desktop, <click> on the Operations pull down menu, select Export VIL Lock List. Once exported, from the DoDFM AE Main Menu select the Online pull down menu then select Download. From the Download window ensure the VIL check box is checked in the Lock Lists block and depress the Connect button. ViLs contained in this list will not be authorized fueling.

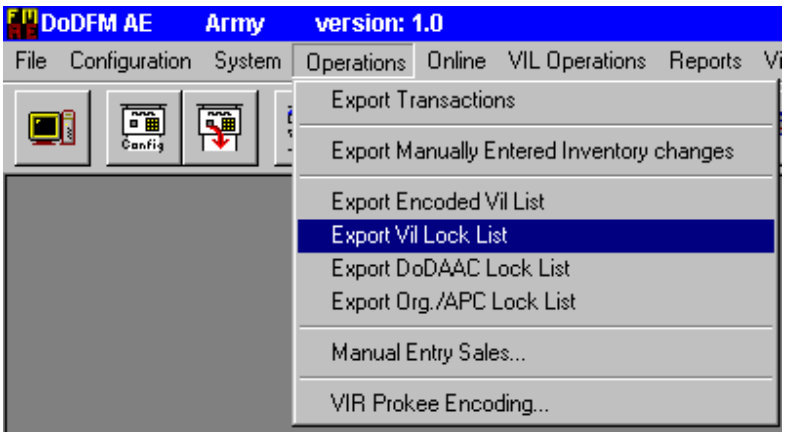


Figure 3-50, DoDFM AE Main Menu – Export VIL Lock List

Selecting Export VIL Lock List will prompt the user to confirm that they want to export the Vil Lock List. Depress the Yes button to proceed.

Figure 3-51, Export VIL Lock List Pop Up Menu

DoDFM AE displays a pop up window indicating that the VIL Lock list was created. The VIL Lock List is stored in and entitled C:\Program Files\SynTech\DoDFM AE\transactions\viltransactions.vil lock.

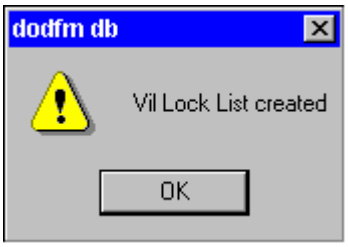


Figure 3-52, VIL Lock List Created Pop Up Window

Export DoDAAC Lock List

The Export DoDAAC Lock List pull down menu provides the capability to manually export only un-exported VILs that have been locked out by DoDAAC. This option is used to export a list of DoDAACs to the VIR that can not fuel. From the DoDFM AE desktop, <click> on the Operations pull down menu, select Export DoDAAC Lock List. Once exported, from the DoDFM AE Main Menu select the Online pull down menu then select Download. From the Download window ensure the DoDAAC check box is checked in the Lock Lists block and depress the Connect button. DoDAACs contained in this list will not be authorized fueling.

Figure 3-53, DoDFM AE Main Menu – Export DoDAAC Lock List

Selecting Export DoDAAC Lock List will prompt the user to confirm that they want to export the DoDAAC Lock List. Depress the Yes button to proceed.

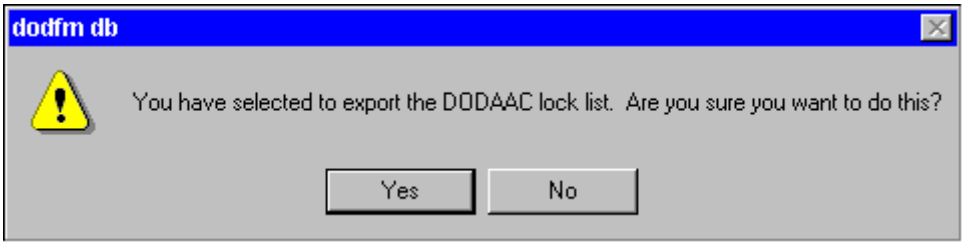


Figure 3-54, Export DoDAAC Lock List Pop Up Menu

DoDFM AE displays a pop up window indicating that the DoDAAC Lock list was created. The DoDAAC Lock List is stored in and entitled C:\Program Files\SynTech\DoDFM AE\transactions\viltransactions.dodaac lock.

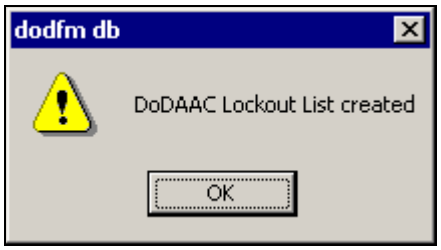


Figure 3-55, DoDAAC Lock List Created Pop Up Window

Export Org./APC Lock List

The Export Org./APC Lock List pull down menu provides the capability to manually export only un-exported VILs that have been locked out by an Org./APC (Organization Code/Account Processing Code). This option is used to export a list of Orgs./APCs to the VIR that can not fuel. From the DoDFM AE desktop, <click> on the Operations pull down menu, select Export Org./APC Lock List. Once exported, from the DoDFM AE Main Menu select the Online pull down menu then select Download. From the Download window ensure the Org Code check box is checked in the Lock Lists block and depress the Connect button. Org./APC Codes contained in this list will not be authorized fueling.

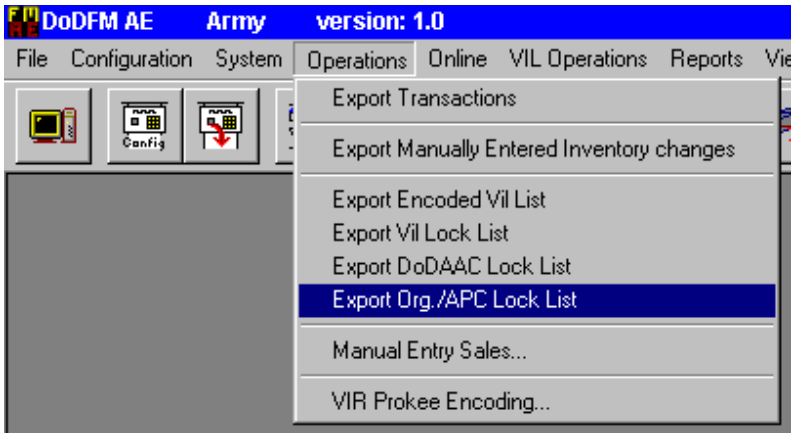


Figure 3-56, DoDFM AE Main Menu – Export Org./APC Lock List

Selecting Export Org./APC Lock List will prompt the user to confirm that they want to export the Org./APC Lock List. Depress the Yes button to proceed.

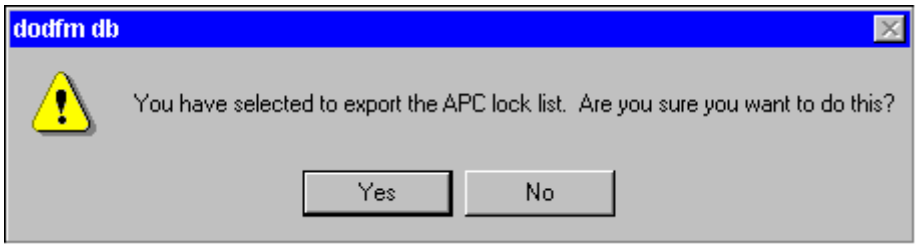


Figure 3-57, Export Org./APC Lock List Pop Up Menu

DoDFM AE displays a pop up window indicating that the Org./APC Lock list was created. The Org./APC Lock List is stored in and entitled C:\Program Files\SynTech\DoDFM AE\transactions\viltransactions.org lock.

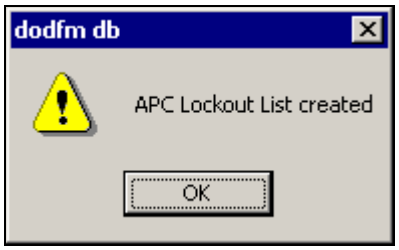


Figure 3-58, Org./APC Lock List Created Pop Up Window

Manual Entry Sales

The Manual Entry Sales pull down menu provides the capability to manually enter sales data to create transactions. From the DoDFM AE desktop, <click> on the Operations pull down menu and select Manual Entry Sales.

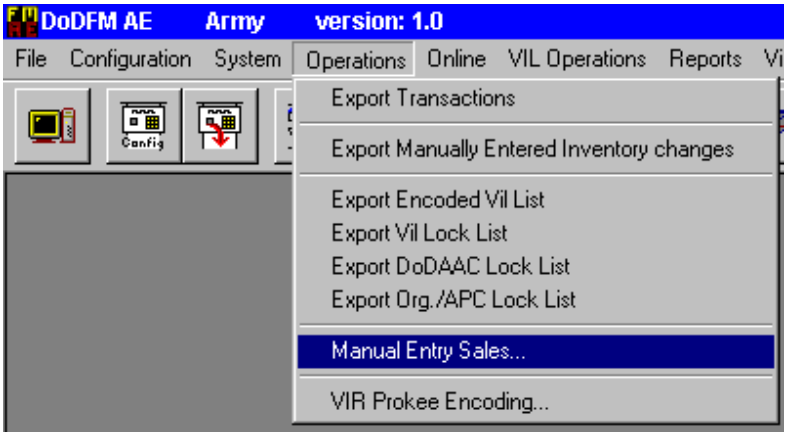


Figure 3-59, DoDFM AE Main Menu – Manual Entry Sales

Selecting Manual Entry Sales will display the Manual Entry Sales Screen. Input the required data and select the Add Button to proceed. Subsequent manual transactions can be entered more rapidly as data from the last added transaction remains on the screen. Only different data relative to the new transaction are required to be entered.

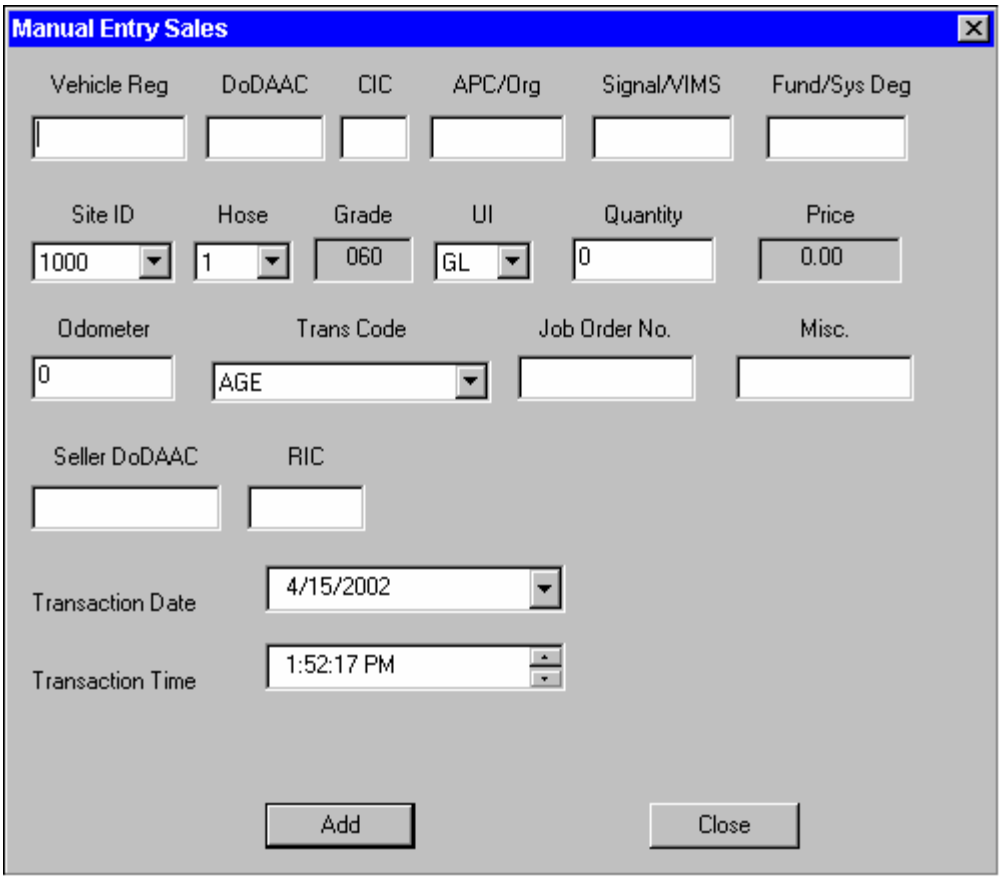


Figure 3-60, DoDFM AE Main Menu – Blank Manual Entry Sales Screen

Improperly filled out entries will be flagged and the user prompted with the following screen indicating which entries need to be corrected.

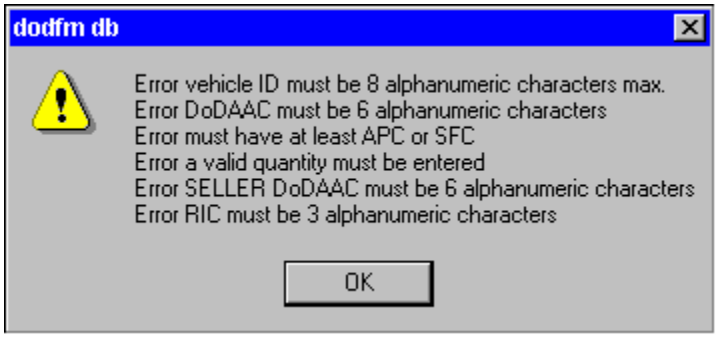


Figure 3-61, DoDFM AE Main Menu – Manual Entry Sales Screen Error Pop Up Window

Correct the appropriate entries and select the Add button.

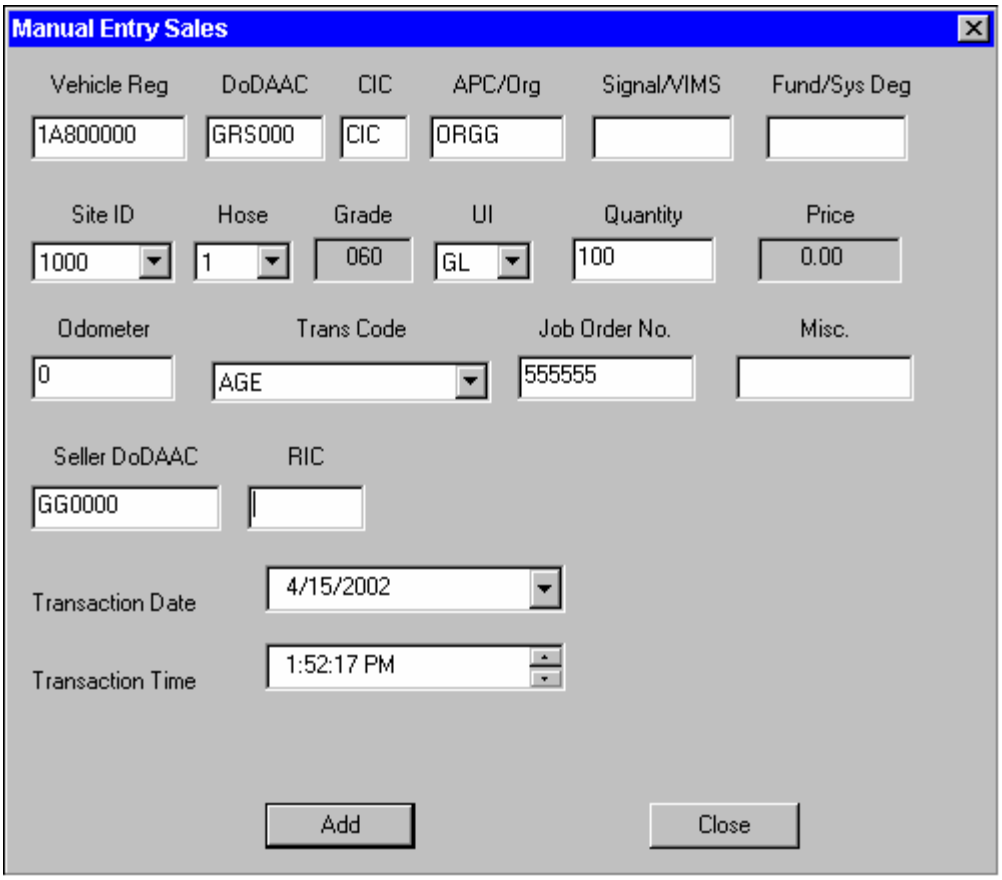


Figure 3-62, DoDFM AE Main Menu – Fill In Manual Entry Sales Screen

Manual transactions saved successfully to the transaction table will also be saved automatically to exported table. <click> OK to proceed.

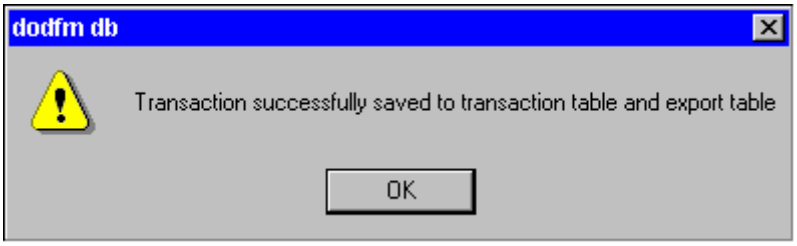


Figure 3-63, Transaction Successfully Saved Pop Up Window

VIR ProKee Encoding

The VIR ProKee Encoding pull down menu provides for the capability to enter predetermined rules that permit re-encoding of the ProKee at the VIR without further user intervention. From the DoDFM AE desktop, <click> on the Operations pull down menu and select VIR ProKee Encoding.

Figure 3-64, DoDFM AE Main Menu – VIR ProKee Encoding

Selecting VIR ProKee Encoding will display the Rule Listing Screen listing all rules that are currently active. Highlight and double click a displayed rule or select the New button to select a new rule. Currently active rules can be deleted and printed from this screen.

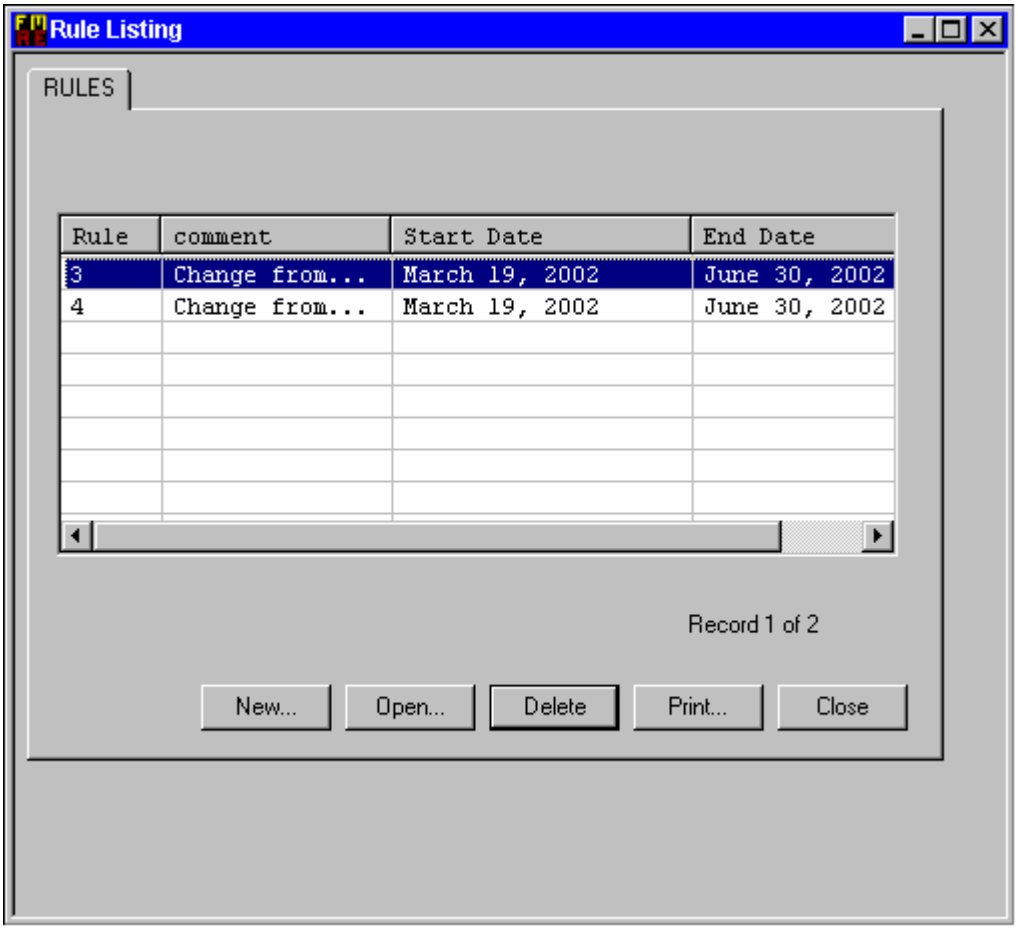


Figure 3-65, Rule Listing Screen

The user is required to select one of five predetermined rules by selecting the applicable rule from the Select Type combo box.
Those four rules are:

Change APC/Org. Code and/or JON/Supplemental DoDAAC
The APC (Account Processing Code)/Org. (Organization) Code and the JON (Job Order Number)/Supplemental DoDAAC can be changed.

Change Signal Code and/or Fund Code
The signal and/or fund code can be changed. A signal or fund code can be added to those ProKees that do not possess one.

Change JON/Supplemental DoDAAC Only
The Job Order Number or the Supplemental DoDAAC can be changed.

Change APC/Org. Code Only
Given a Vehicle Registration Number (Vehicle Reg) the APC or Organization Code can be changed.

Change TID Code Only
Given a Vehicle Registration Number (Vehicle Reg) the TID Code can be changed.

Figure 3-66, The Five VIR ProKee Encoding Rules

Rules are dated with a Start Date and End Date. The Start Date is the date that the rule becomes effective. Users may input rules prior to the Start Date and the rule will become effective at 0001 hours on the Start Date. All rules will be in effect until 2400 hours on the End Date. The user will be prompted that a given rule will expire fourteen days prior to that rule expiring. At that time the user will have the opportunity to accept the current rule expiration date, expire the rule immediately or extend the expiration date. Select the date the rule becomes effective from the Start Date combo box. Select the date the rule expires from the End Date combo box. Data presented in a rule is not changed in the DoDFM AE database until the effective date of the rule. At that time all ProKees in the database that meet the change to parameters of the rule will be affected.

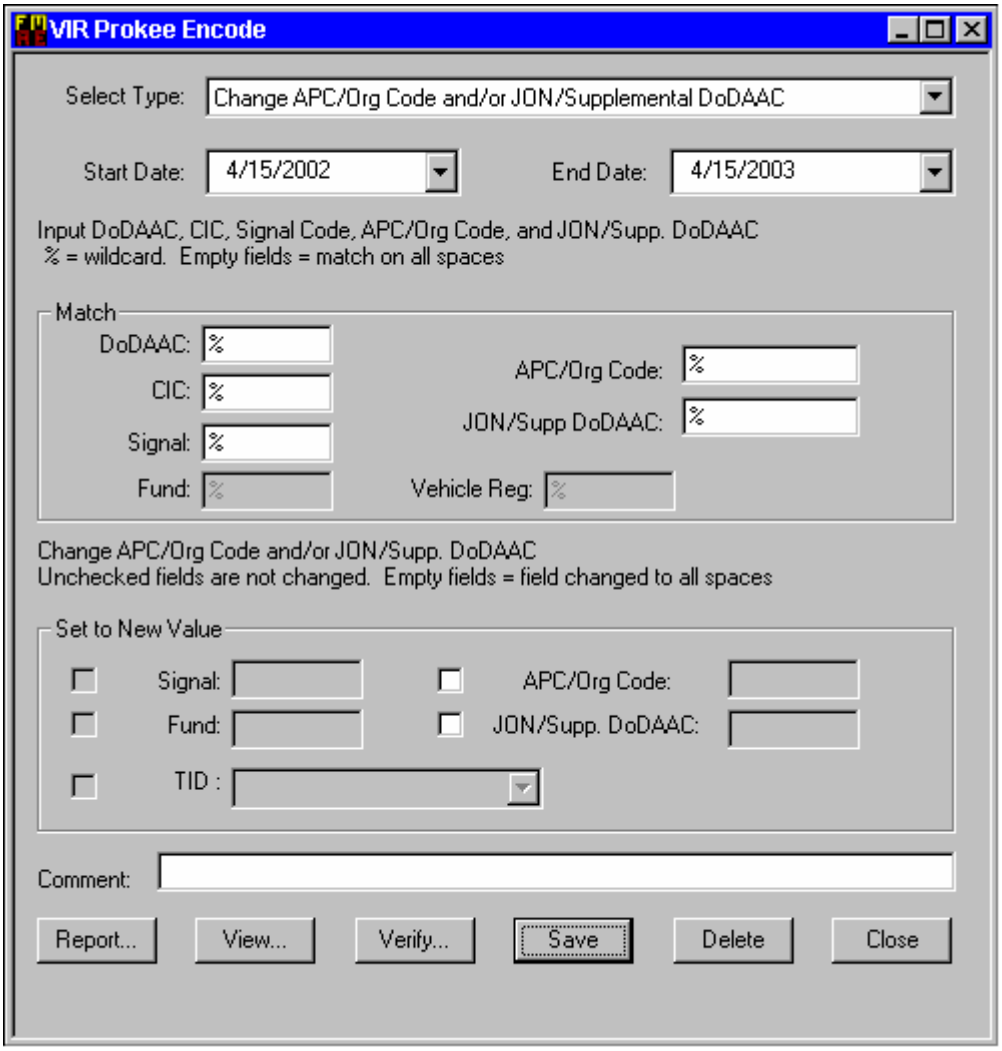


Figure 3-67, VIR ProKee Encoding Screen

By changing each rule in the Select Type combo box the data required to be input changes. Directions for each rule are provided in text just below the Start Date and End Date combo boxes. The Match block of the screen provides the data elements that can be input to discriminate which ProKees will be selectively changed. By leaving a % (percent) sign in a given field all ProKees that match that specific data element will be selected. In example, leaving the percent sign (%) in the DoDAAC data element field will select all ProKees within the database as each encoded ProKee requires that the DoDAAC field be input. Inputting a specific DoDAAC will select all ProKees for that specific DoDAAC. Inputting a specific DoDAAC and a specific CIC (Customer Identification Code) will select all ProKees for the parameters entered; such as, all vehicles and equipment from DoDAAC W45W90 and with a CIC of USA and so on. Specific groupings of ProKees can be selected by inputting data in all of the active fields of the Match block.

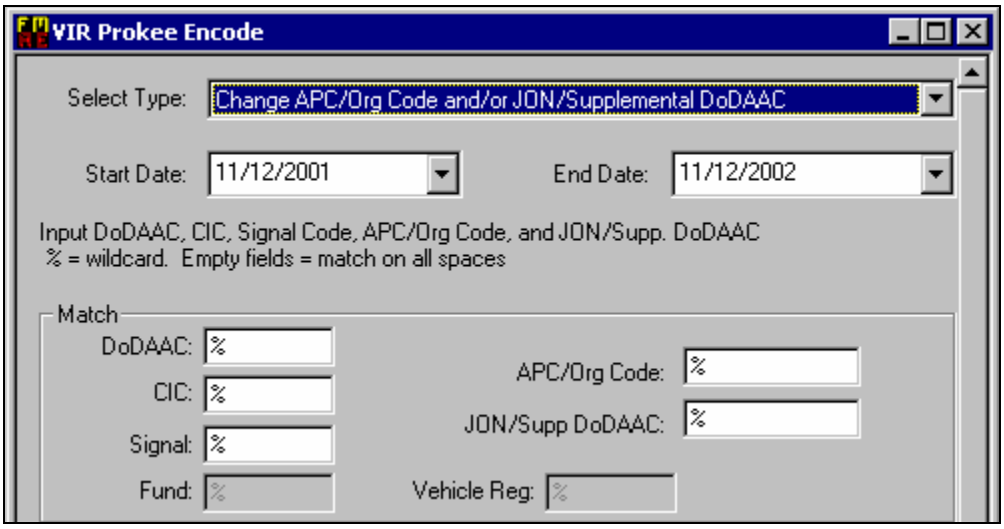


Figure 3-68, VIR ProKee Encode Screen - Match Block

Once all of the Match block data has been entered to select a specific grouping of ProKees, the user must then enter the data that will be changed when the Prokee is re-encoded. Directions for these data fields are provided in text between the Match and Set to New Value blocks of the screen. Like the directions for the Match block, directions for the Set to New Value block change based upon which rule is selected. The difference between data entered in the Set to New Value block is that check boxes are provided for each field. The user must check the appropriate check box to activate data changes in a specific field. Once a check box is checked the corresponding data field becomes active. If a check box is checked and no data entered for that specific data field, the selected ProKees will be re-encoded with spaces. A Comment field is provided for the user to input a short title of the rule created.

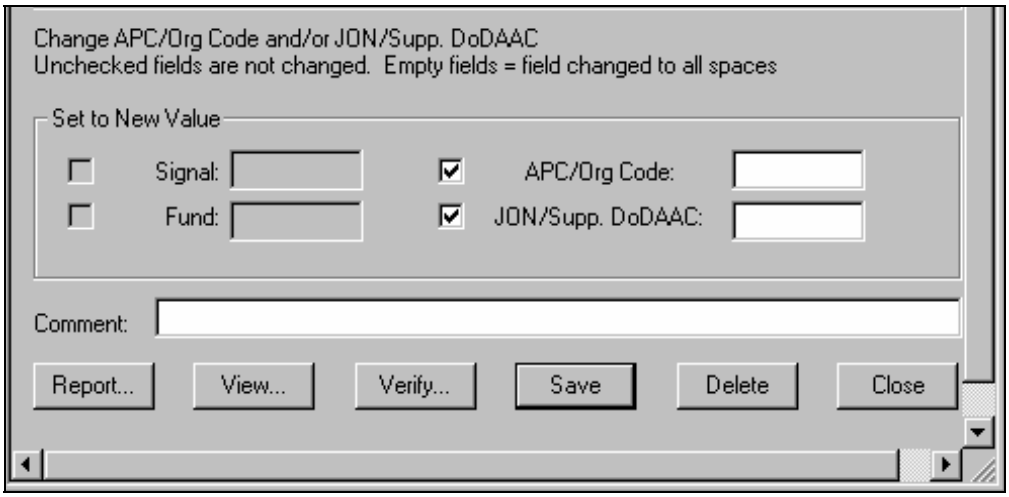


Figure 3-69, VIR ProKee Encode Screen – Set to New Value Block

After all data has been input for a specific rule select the Verify button to verify that there are encoded ProKees in the database that match the input parameters. If no ProKees in the database match the input parameters the user is not permitted to re-encode any ProKees. This feature denies users that did not originally encode a specific ProKee (have ownership) to re-encode the ProKee. If there are ProKees in the database that match the input parameters then the user is notified that the rule is valid.

Figure 3-70, Rule is Valid Pop Up Window

Select the View button to list vehicles for a specific rule. This listing contains data specific to the vehicles that will be changed when the rule becomes effective. The listing does NOT contain data that will be changed until the rule is saved and the Start Date becomes effective.

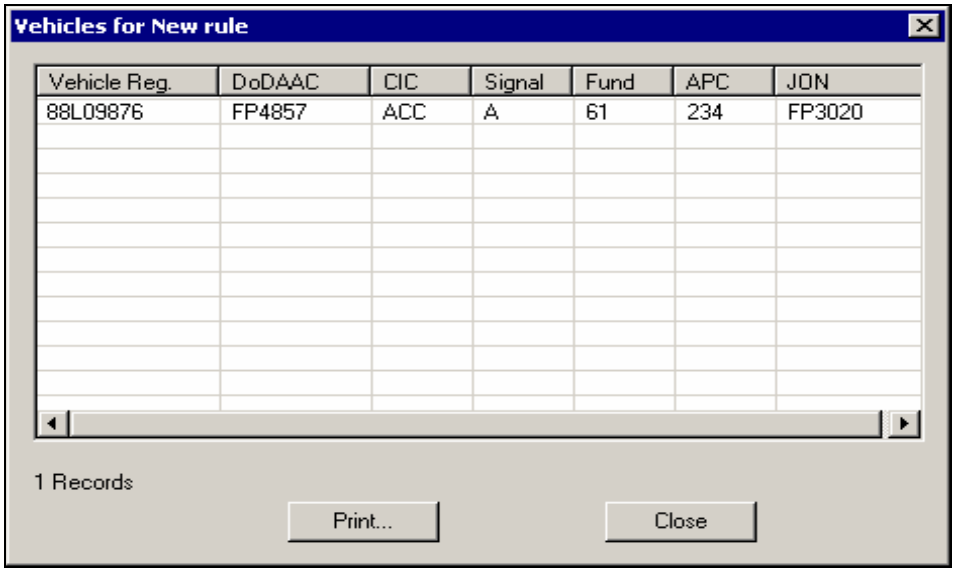


Figure 3-71, Vehicle Listing for New Rule

Online Menu

Download

The Download pull down menu is the interface to download and query transactions, download TMU data and upload lock lists to the VIR. Daily, weekly and monthly automatic downloads can be scheduled. From the DoDFM AE desktop, <click> on the Online menu and <click> Download.

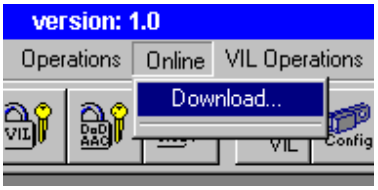


Figure 3-72, DoDFM AE Main Menu – Download

Selecting Download will display the Download window. The immediate left side of the Download window contains all of the sites that have been configured during Site Configuration. The user must check the appropriate check box to activate which sites will be downloaded when the download is scheduled.

In addition the user will find three blocks of check boxes/radio buttons in the middle of the window: Transactions, Mobile Transactions and Lock Lists. The right side of the screen contains several general options pertaining to downloading and scheduling of downloads.

Transactions block

The Transactions block is used to download or query all transactions in the VIR. This includes mobile and fixed site transactions. The available options are:

None
Select None to Download NO Transactions. This option is normally used to download TMU data only.

Download
Select Download to retrieve transactions from the VIRs selected as indicated by those sites checked by the check boxes in the left hand side of the Download window. Downloaded transactions must be exported, either manually or automatically, to FAS or another application. Each Master VIR possesses the capability to store up to 1,024 transactions. These transactions are continually stored in a cyclical buffer. The 1,025 transaction begins writing over in position one and so on, retaining the last 1,024 transactions in VIR memory.

Query
Select Query to retrieve a copy of the VIRs transactions. This option retains the “hard” transactions in the VIR and permits the user to “see” queried transactions without having to export the transactions. To retrieve mobile transactions ensure the Include Mobile radio button is selected in the Mobile Transactions block. TMU data will not be retrieved using the query option.

Auto Export

The Auto Export check box directs DoDFM AE to automatically export the download data to files in the C:\Program Files\SynTech\DoDFM AE\transactions folder.

Mobile Transactions block

The Mobile Transactions block is used to download or query only mobile transactions in the VIR. The available options are:

None
Select None to Download NO Mobile Transactions.

Mobile Only
Select Mobile Only to get only Mobile transactions – No fixed site transactions.

Include mobile
Select Include Mobile to get both Mobile transaction and fixed site transactions in the download or query operation.

Lock Lists block

The Prokee® lock list block includes the vehicle, DoDAAC and Org. Code lockout lists along with the capability to upload the VIR encoding rules. The available options are:

VIL
Select the VIL check box to send the VIL (Prokee) lock out list to the selected VIRs.

DoDAAC
Select the DoDAAC check box to send the DoDAAC lock out list to the selected VIRs.

Org. Code
Select the Org Code check box to send the Org Code lock out list to the selected VIRs.

Rules
Select the Rules check box to send the VIR encoding rules to the selected VIRs.

General page options

The right side of the Download screen contains several general options pertaining to downloading and scheduling of downloads. Those available options are:

CONNECT
Depress the CONNECT button to execute the communications attempt.

DISCONNECT
Depress the DISCONNECT button to abort a communications attempt in process.

SAVE AUTO OPTIONS
Depress the SAVE AUTO OPTIONS button to Save the selected setup options.

SCHEDULE
Depress the SCHEDULE button to proceed to the Schedule Download window:

CLOSE
Depress on the CLOSE button to close the Download window.

Max Attempts
Input a number from 1 to 100 to indicate the number of dialing attempts that the program will make to connect with the selected site(s). If the VIR does not answer the phone when dialed once and the dial timeout has expired, the program will redial the site and try again as many times as the number of Max Attempts indicated.

TMU
If connected to a tank monitoring system and the appropriate hardware is connected between the TMU and the VIR, check this box and the program will download TMU data as indicated on the TMU tab of the Site Configuration window.

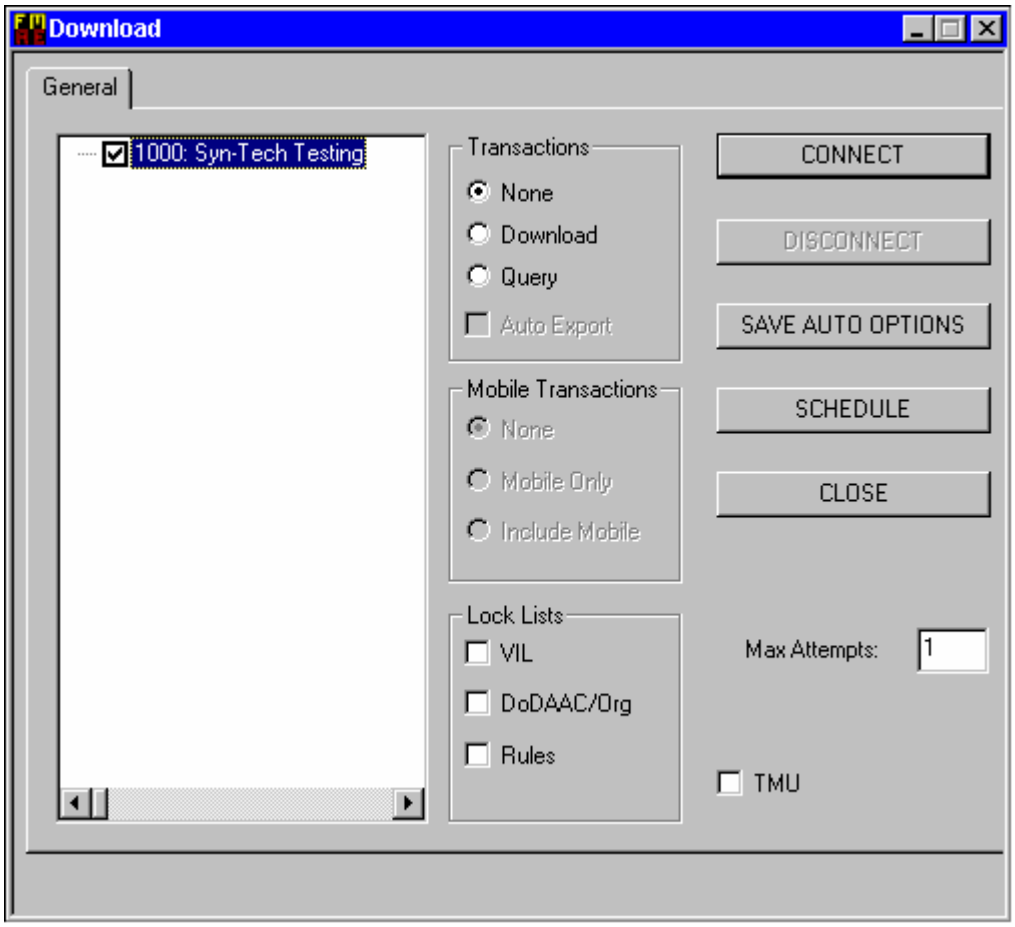


Figure 3-73, DoDFM AE Download Window

Depress the SCHEDULE button the proceed with scheduling the download frequencies.

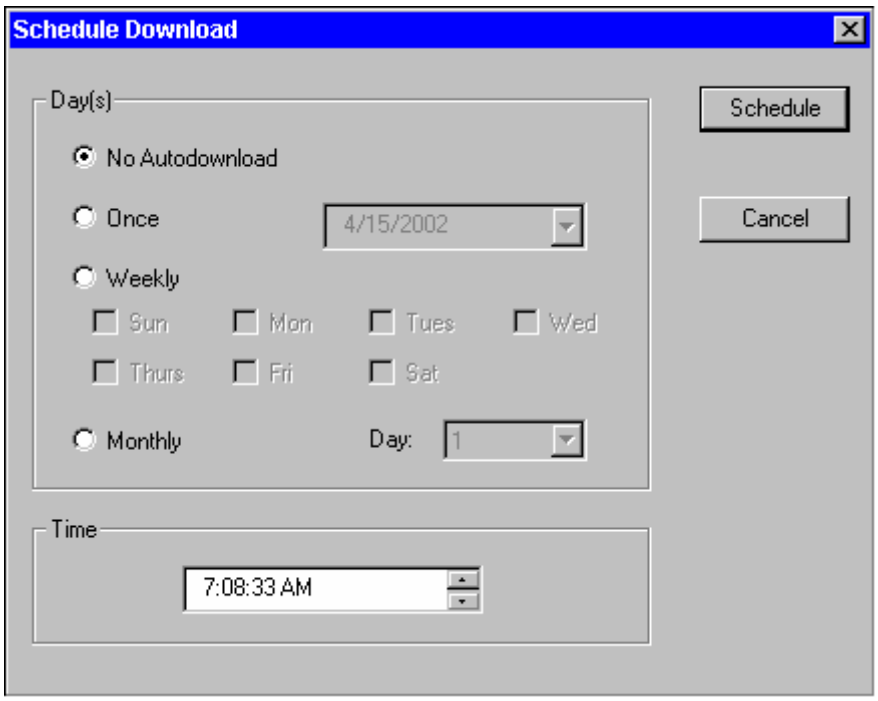


Figure 3-74, DoDFM AE Schedule Download Window

The Schedule Download window provides the configuration parameters of the Auto Download option. After configuring this screen select the Schedule button to Save the settings and activate the auto download function. Once that is done the configured action (download, query etc) will begin at the scheduled date and time that has been annotated. The DoDFM AE Program need not be open for the scheduled auto download to execute as long as the DoDFM AE NT Service is installed and running. The user need only select the day(s) and time to schedule the auto download frequencies. The available options are:

No Autodownload
Select the No Autdownload radio button to NOT automatically download data from the VIR(s) selected.

Once
Select the Once radio button to perform a one time download of data from the VIR(s) selected. A future date may be selected or today's date. Use in conjunction with the Time combo box.

Weekly
Select the weekly radio button to perform a download one day of the week, two days, three days and so on. If the Auto Export check box is checked be attentive to the days selected as transactions can be automatically downloaded and exported daily possibly overwriting a previous days file. This is particularly evident during holidays if the scheduled days are not adjusted to reflect the holiday.

Monthly
Select the Monthly radio button to perform a download on a pre-selected day of the month. Use the pull down menu to select the day of the month.

Time
Adjust the Time block to reflect the time that a download should occur.

Depress the SCHEDULE button to Save and exit the Schedule Download window.

Connect Window Operation

To initiate a download operation, <click> on the CONNECT Button. DoDFM AE will open a connection status window and will display the real-time connection status.

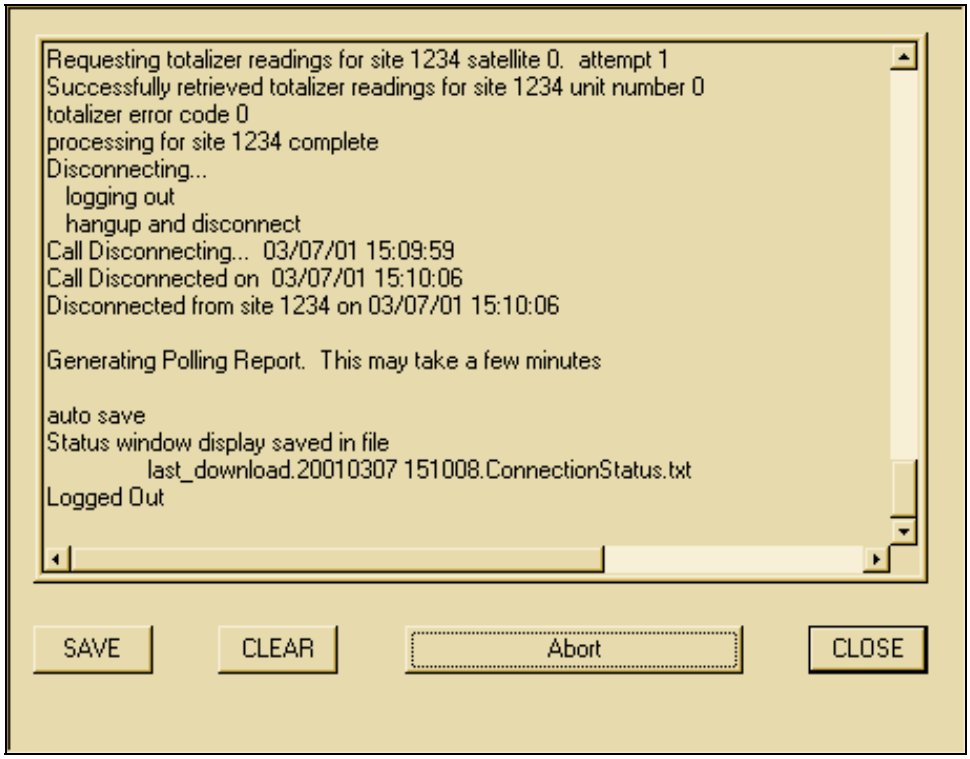


Figure 3-75, DoDFM AE Download Connect Window

Additionally, the connection status is written to a file entitled: <last_download.20010307 151008.ConnectionStatus.txt>. This file is typically stored in the file folder: <C:\Program Files\SynTech\DoDFM AE>.

The title of a Connection Status is time/date stamped by DoDFM AE as yyyymmdd hhmmss. In this way all files can be easily identified. A typical connection status files is shown below.

```
Connect to site 1234 on 03/07/01 15:09:05
initializing modem...

Baud rate: 38400
Com port index: 0
Timeout Value: 40
modem init string: X4V0E0&C1&D2 S7=40
Dial prefix: ATDT

modem initialized
Setup modem
Dialing: 327: 03/07/01 15:09:10
modem response: CONNECT 33600/ARQ/V34/LAPM/V42BIS

LOGIN successful
Requesting unit type
```

```
Connected to a fixed site
connected to site 1234
Begin transaction processing
Requesting FIXED Transaction count
4 entries in the FIXED Transaction
4 fixed transactions for site 1234
Retrieve transactions
Requesting Fixed Site transactions
Requesting Fixed Site transactions
Preparing to download into file: C:\Program Files\SynTech\DoDFM AE\rawdata\12340307 site1234 MAR
150937.raw
Begin download into file: C:\Program Files\SynTech\DoDFM AE\rawdata\12340307 site1234 MAR072001 150937.r
download into file: C:\Program Files\SynTech\DoDFM AE\rawdata\12340307 site1234 MAR072001 150937.raw suc
download file C:\Program Files\SynTech\DoDFM AE\rawdata\12340307 site1234 MAR072001 150937.raw success
received fixed transaction for site 1234 successfully
Retrieved fixed transactions successfully
processed fixed transaction for site 1234 successfully
Fixed trans count should be 4 decoded 3 valid transactions, 1 valid message transactions
2 zero quantity transactions, 0 discarded transactions, and 0 null data transactions

Processed 4 transactions. Clear fixed transaction from site 1234
Clearing fixed transactions for site 1234. attempt
Requesting FIXED Transaction count
0 entries in the FIXED Transaction
transactions cleared
cleared fixed transaction for site 1234 successfully
Fixed transactions retrieved and processed
Transaction processing complete for site 1234
Clearing old DODAAC lockout list on VIR
Confirming clear of old DODAAC lockout
1234 is a zero length file, no need to send anything
sent DoDAAC Lockout List to site 1234 successfully
Clearing old ORG lockout list on VIR
Confirming clear of old ORG lockout
1234 is a zero length file, no need to send anything
sent Organization Code Lockout List to site 1234 successfully
Clearing old VIL lock list on VIR
Confirming clear of old VIL lock
Sending VIL lock to VIR at site 1234
Begin transmitting VIL lock list to site 1234
Preparing to upload file vil.lock
Begin upload file vil.lock
upload file vil.lock successful
Upload file vil.lock successful
sent VIL Lock List to site 1234 successfully
no satellites found
Getting totalizers attempt 1. total satellites 0 active satellites 0
no satellites found
Getting totalizers attempt 2. total satellites 0 active satellites 0
no satellites found
Getting totalizers attempt 3. total satellites 0 active satellites 0

totalizer sats number 0 sat number 0
Requesting totalizer readings for site 1234 satellite 0. attempt 1
Successfully retrieved totalizer readings for site 1234 unit number 0
totalizer error code 0
processing for site 1234 complete
```

```
Disconnecting...
 logging out
 hangup and disconnect
Call Disconnecting... 03/07/01 15:09:59
Call Disconnected on 03/07/01 15:10:06
Disconnected from site 1234 on 03/07/01 15:10:06

Generating Polling Report. This may take a few minutes

auto save
Status window display saved in file
last_download.20010307 151008.ConnectionStatus.txt
```

Figure 3-76, DoDFM AE Typical Download Connect Window

Some things to note from the example file.

- Nowhere does the word “Error” appear.
- The download of transaction raw data into file: C:\Program Files\SynTech\DoDFM AE\rawdata\12340307 site1234 MAR072001 150937.raw was successful.
- The vil lock file was successful uploaded.
- DoDAACs were successfully sent.
- Org Codes were successfully sent.

VIL Operations Menu

The VIL Operations pull down menu provides access to submenus pertaining to encoding of vehicle and configuration VILs and the input of relevant data pertaining to lock lists.

Vehicle VIL Listing

The Vehicle VIL Listing provides the necessary input screens to encode a vehicle VIL. From the DoDFM AE desktop, <click> on the VIL Operations pull down menu and <click> on Vehicle VIL Listing.

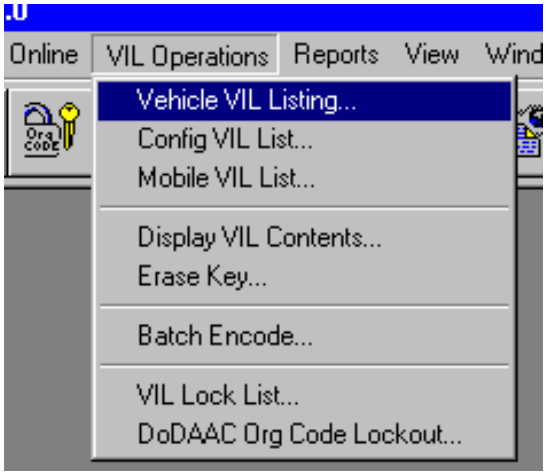


Figure 3-77, DoDFM AE Main Menu – VIL Operations- Vehicle VIL Listing

Selecting Vehicle VIL Listing pull down menu will display the following screen. To open a Vehicle ID <click> on the Vehicle ID to highlight it and select the Open button or double <click> on the User ID, or to add a new Vehicle ID, enter up to a new 8-digit alphanumeric phrase in the Vehicle ID Box and <click> new.

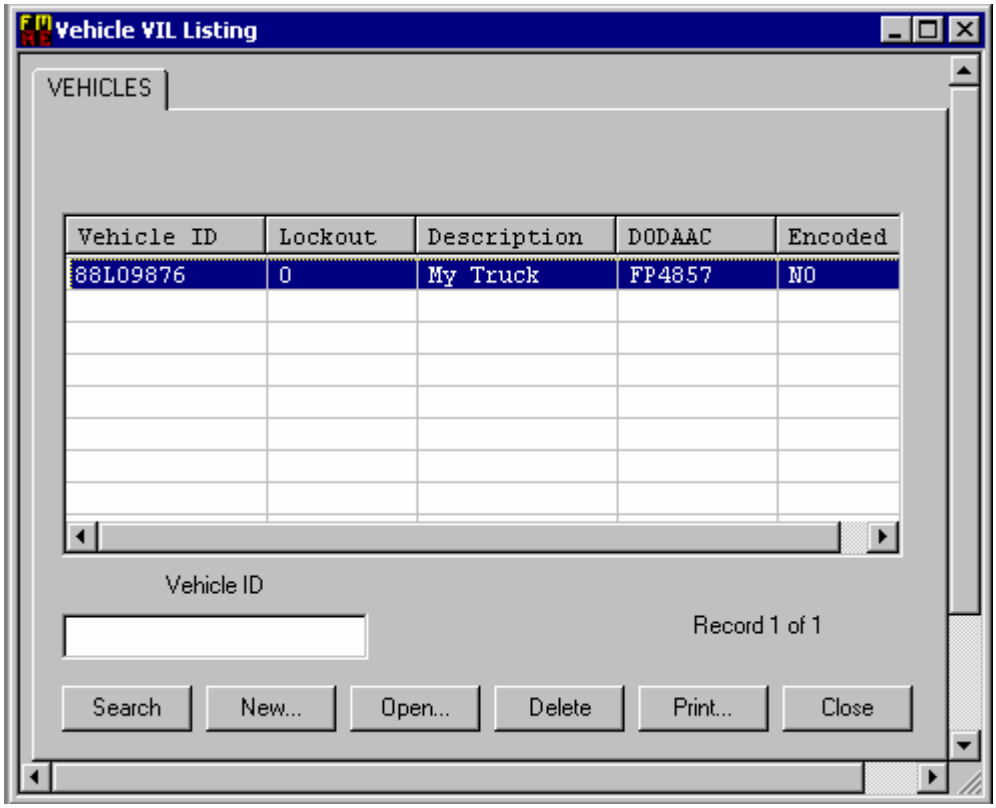


Figure 3-78, VIL Operations Listing

Performing this action will display the Vehicle VIL – DoD Standard window. The naming conventions (- DoD Standard) of this screen can change based upon the Service selected on the System Configuration Screen. The Vehicle VIL Listing - DoD Standard Window has three tabs; General, Grades, and Misc.

General Tab

The **General tab** of the Vehicle VIL – DoD Standard menu provides for input of the majority of the billing data for a specific VIL. A description of the fields on the General tab are provided below:

Description (25A/N - Optional)
Enter a short description of the vehicle/equipment. The description field is limited to 25-alphanumeric characters, although only 16 characters will be visible in the window.

Customer ID Code (3A/N- Mandatory)
Enter the Customer Identification Code (CIC) for the vehicle or equipment that the VIL is being encoded.

Organization/APC Code (4A/N - Optional)
Enter the three (3) digit Air Force Organization Code, up to four (4) digit Navy/Marine Corps Organization Code or up to four (4) character Army Account Processing Code. If this field is blank, the signal and fund code blocks must be annotated.

Home Station DoDAAC (6A/N - Mandatory)
Enter the home station DoDAAC of the vehicle/equipment.

Miscellaneous (6A/N - Optional)
Enter management data appropriate to this VIL.

Trans ID (15A/N - Mandatory)
The transaction Identification type field is a pull down selection menu with sixteen (16) choices. Select the most appropriate choice for this vehicle/equipment.

Comments (50A/N - Optional)
This is an optional field that can be used to further stratify the organization or data input on the VIL.

Lockout # (1N – Program Assigned)
The lockout number is a unique program assigned number that permits the locking out (non-use) of a specific VIL. The lockout number permits the locking out of a vehicle and the re-encoding of a new VIL using the same vehicle registration number and data used on the locked out VIL. Used primarily for lost or stolen Vils.

Vehicle Year (4N - Optional)
This is an optional field that can is used to enter the year of the vehicle.

Signal Code (1A/N - Mandatory)
Enter the appropriate Signal Code.

Fund Code (2A/N - Mandatory)
Enter the appropriated Fund Code.

Job Order Number/Supplemental DoDAAC (6A/N - Optional)
The Job Order Number is used primarily by Navy and Marine Corps activities. Enter the Supplemental DoDAAC when the Signal Code equals “B”. When the Signal Code equals “B” the Supplemental DoDAAC becomes a mandatory field.

Authorized Check Box
Check the Authorized check box to permit encoding of the VIL. If the Authorized check box is not checked the data will not be presented for encoding a VIL.

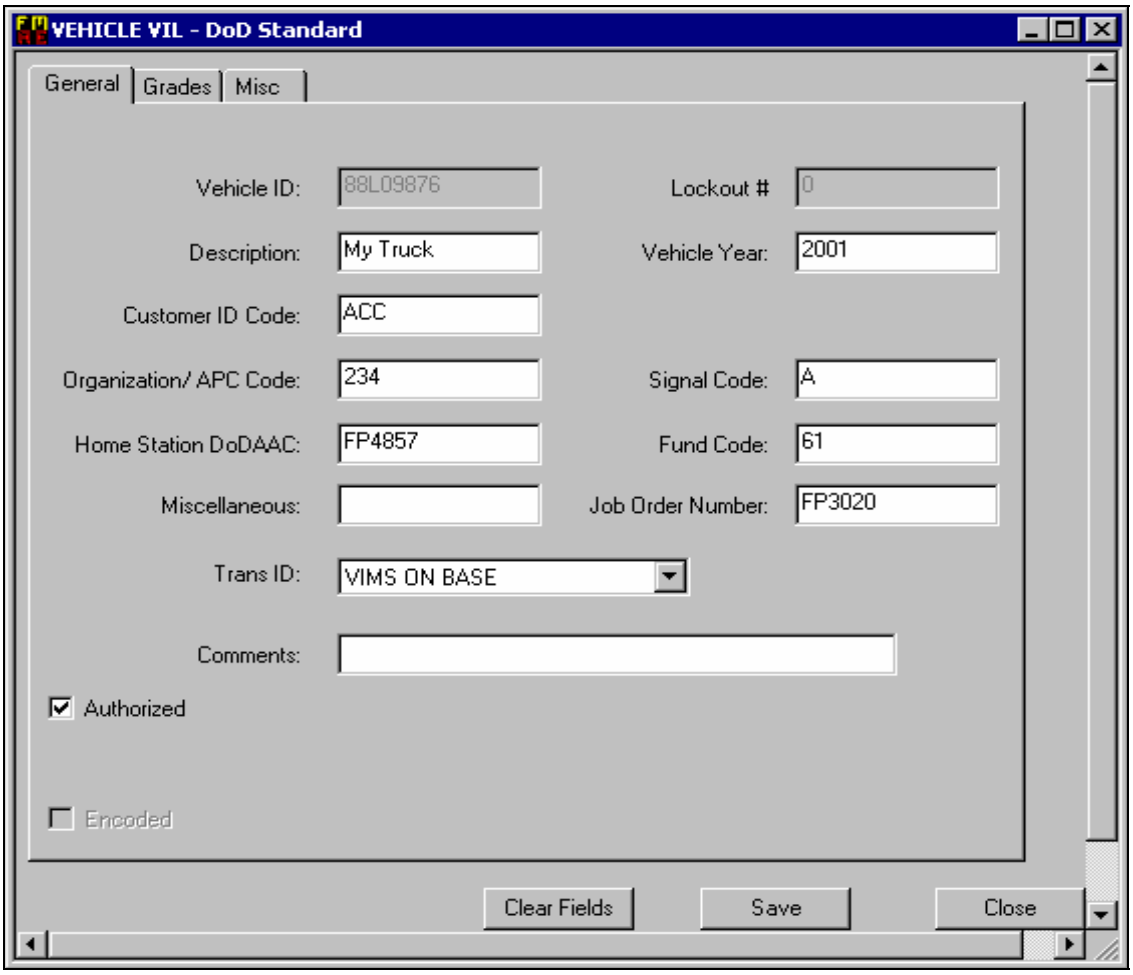


Figure 3-79, Vehicle VIL – DoD Standard Window – General Tab

<Click> on the Grades Tab to select vehicle grade codes, tank sizes, etc.

Grades Tab

The **Grades tab** of the Vehicle VIL – DoD Standard menu provides for input of the vehicles authorized grade codes and the input of data relevant to exception reporting. A description of the fields on the Grades tab are provided below:

Grades block

The Grades block of the Vehicle VIL – DoD Standard screen possesses the DFAMS authorized grade codes that are selected and written to the VIL. In addition, seven super grade codes are provided and 27 X-type user defined grades, three each assigned to a specific super grade and six X-type grade codes not assigned to a specific super grade.

VIL Grades

Fuel Grades are assigned to a VIL by selecting Grades from the right hand column of the Grades block and moving them to the left hand column. To select a Fuel Grade <click> on the Fuel Grade to highlight it and select the << button or double <click> on the Fuel Grade. All grades the vehicle may use should be added to the vehicle's list (up to 8 are allowed) Super Grade codes are provided which cover groups of fuel types such as

all diesel fuels, all MOGAS, etc. See Appendix B for a comprehensive list of which grade code is assigned to each super grade.

SG CNX	For all compressed natural gas products
SG DFX	For all diesel fuel products
SG DLX	For all low sulfur diesel products
SG LPX	For all Liquid Propane products
SG MGX	For all gasoline products
SG AVX	For all Aviation Gasoline products
SG JPX	For all Jet Fuel products

Tank Size – Optional
Used for exception reporting. Enter the approximate size of the vehicles fuel tank.

Range – Optional
Used for exception reporting. Enter the average range between fuelings when using the odometer entry on the VIR.

Fueling Limit – Optional
Used for exception reporting. Enter the number of times a vehicle can fuel at a site in a given day.

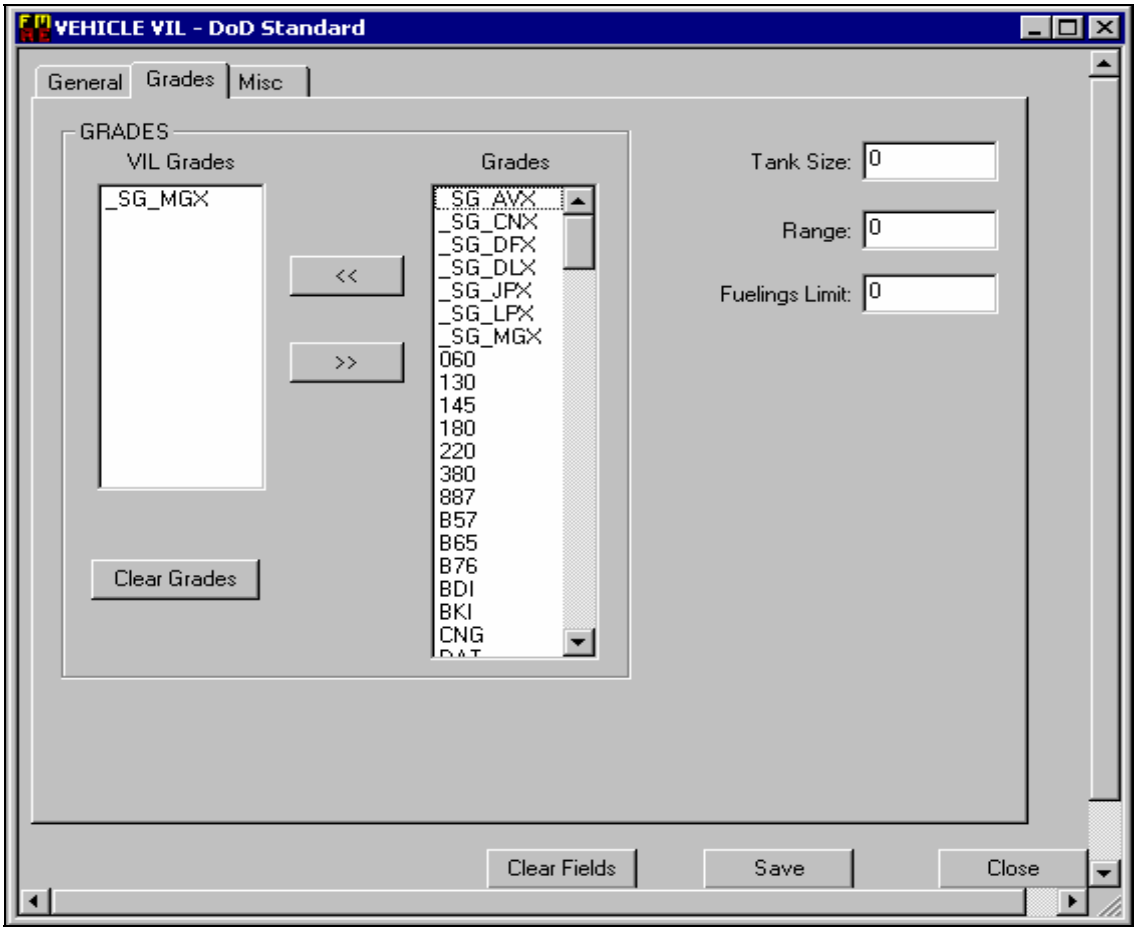


Figure 3-80, Vehicle VIL – DoD Standard Window – Grades Tab

<Click> on the Misc (miscellaneous) Tab to select vehicle grade codes, tank sizes, etc.

Misc Tab

The **Misc tab** of the Vehicle VIL – DoD Standard menu provides for input of a VIL expiration date. A description of the fields on the Misc tab are provided below:

Authorized Check Box
Check the Authorized check box to permit encoding of the VIL. If the Authorized check box is not checked the data will not be presented for encoding a VIL.

Encoded check box
This check box indicates if the VIL has been encoded. If encoded, the encode date is listed to the right.

Expiration Date
An Expiration Date Check Box is provided so that VILs may be encoded with an expiration date. In this manner, VILs automatically expire the day after the expiration date. To add an expiration date check the Expiration Date Check Box and using the Expiration Date Combo Box select a date.

Reissue Count
This information counter relays how many times this VIL has been re-encoded and defines the time and date of the last re-encoding.

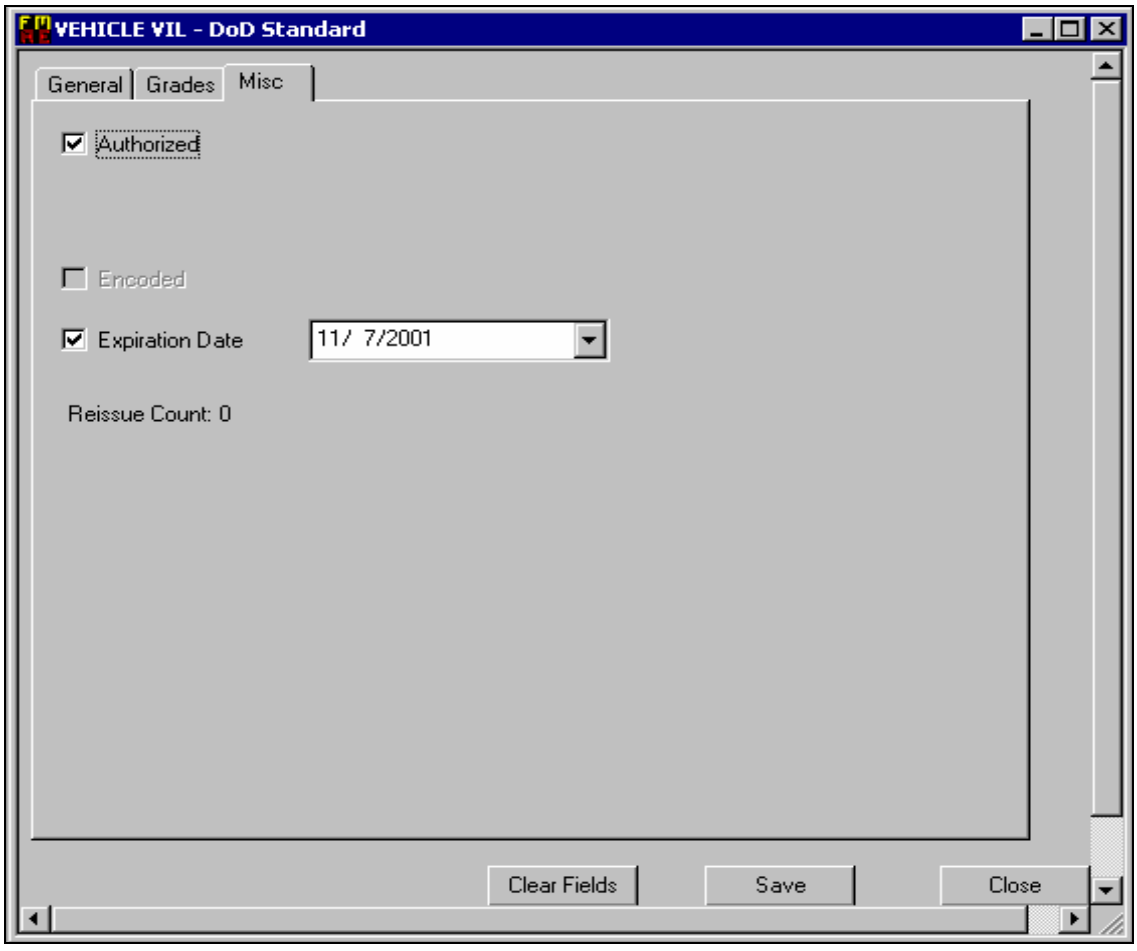


Figure 3-81, Vehicle VIL – DoD Standard Window – Misc Tab

Config VIL List

The Config VIL List provides the necessary input screens to encode a Configuration VIL. From the DoDFM AE desktop, <click> on the VIL Operations pull down menu and <click> on Config VIL List.

Figure 3-82, DoDFM AE Main Menu – VIL Operations- Config VIL List

Selecting the Config VIL List pull down menu will display the following screen. To open a Config VIL <click> on the Config ID to highlight it and select the Open button or double <click> on the Config ID, or to add a new Config VIL, enter up to a new 8-digit alphanumeric phrase in the Config Code Box and <click> new.

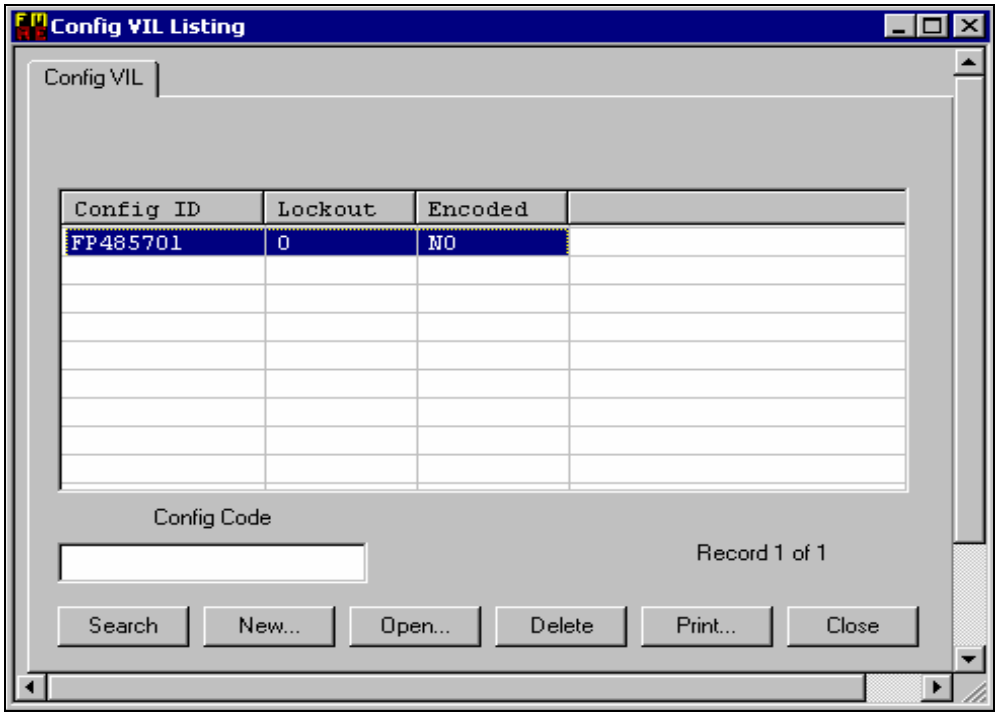


Figure 3-83, Config VIL Listing

Performing this action will display the Config VIL – DoD Standard window. The naming conventions (- DoD Standard) of this screen can change based upon the Service selected on the System Configuration Screen. The Config VIL - DoD Standard Window has one tab – General.

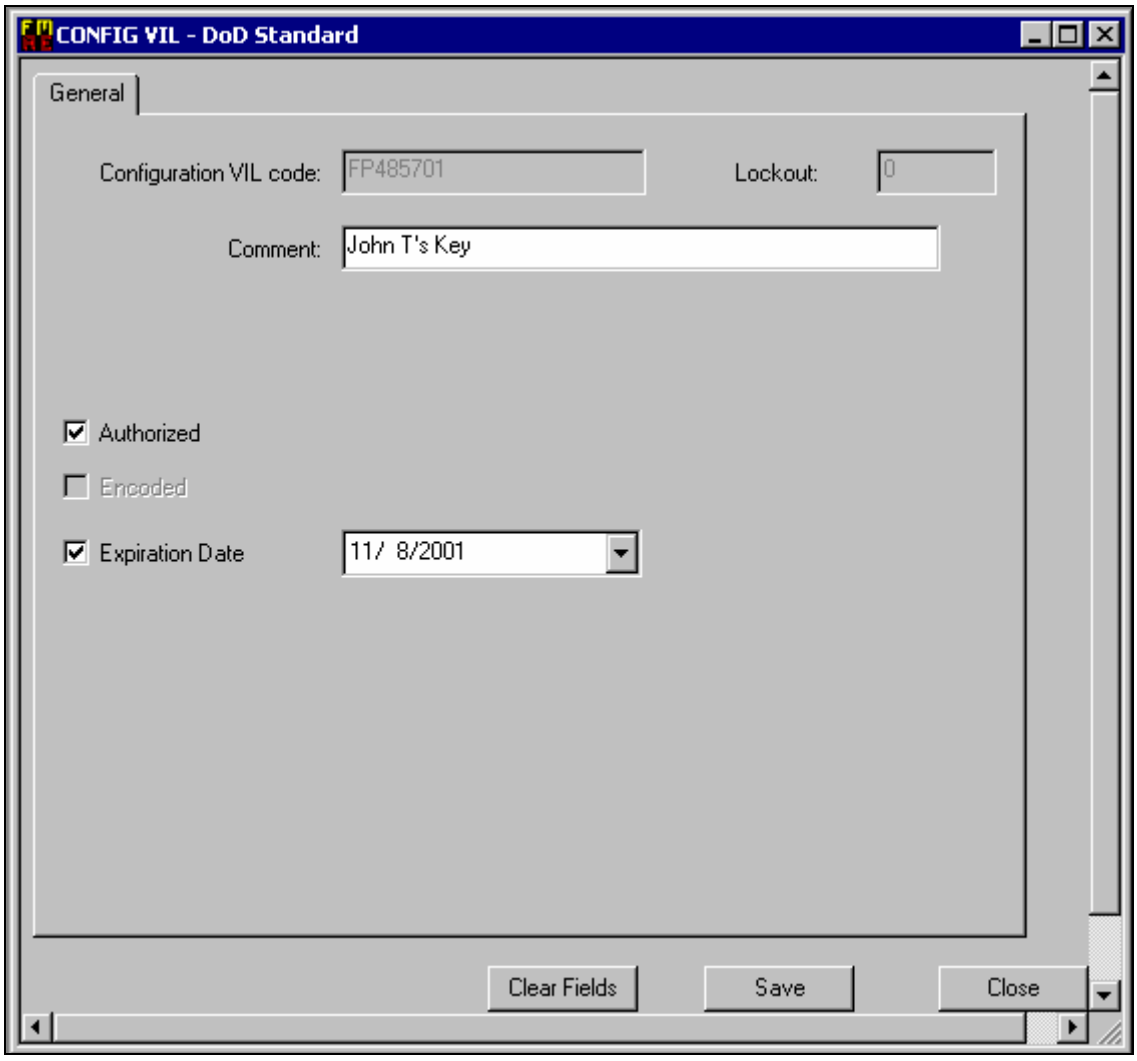


Figure 3-84, Config VIL – DoD Standard Screen

The Config VIL is very different from all the other VILs in the DoDFM AE system. It is used to gain access to VIR configuration functions. The Config VIL must be in the VIL lockout list to be authorized for use (the opposite of all other VILs). A description of the fields on the Config VIL – DoD Standard screen are provided below:

Comment Field
Although an optional field, it is intended as a place to store information about who is responsible for Config VIL so it can more easily be identified and should locking it out become necessary.

Authorized Check Box
Check the Authorized check box to permit encoding of the VIL. If the Authorized check box is not checked the data will not be presented for encoding a VIL.

Encoded check box
This check box indicates if the VIL has been encoded. If encoded, the encode date is listed to the right.

Expiration Date
An Expiration Date Check Box is provided so that VILs may be encoded with an expiration date. In this manner, VILs automatically expire the day after the expiration date. To add an expiration date check the Expiration Date Check Box and using the Expiration Date Combo Box select a date.

Lockout #
The lockout number is a unique program assigned number that permits the locking out (non-use) of a specific VIL. The lockout number permits the locking out of a Config VIL and the re-encoding of a new VIL using the same Configuration VIL Code and data used on the locked out Config VIL. Used primarily for lost or stolen Vils.

Mobile VIL List

The Mobile VIL List provides the necessary input screens to encode a Mobile VIL. From the DoDFM AE desktop, <click> on the VIL Operations pull down menu and <click> on Mobile VIL List.

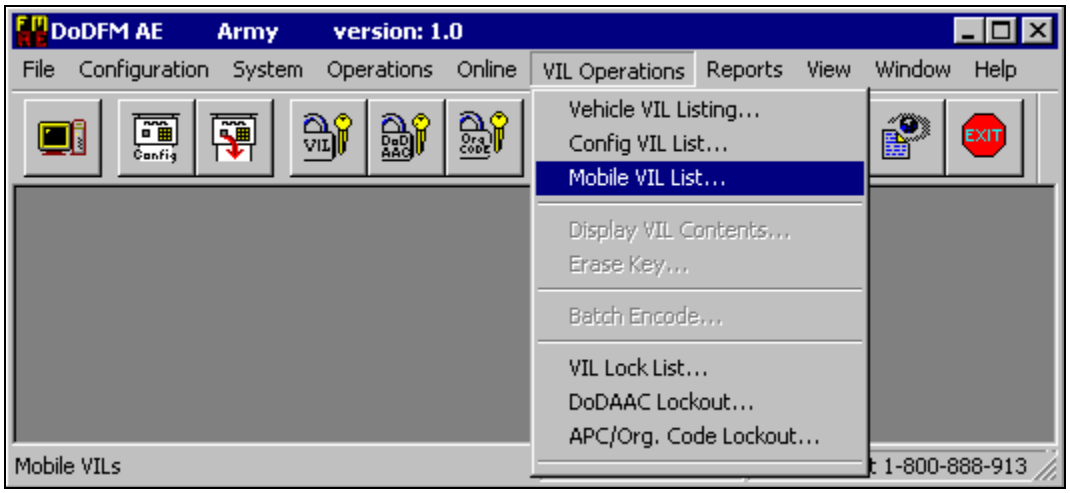


Figure 3-85, DoDFM AE Main Menu – VIL Operations- Mobile VIL List

Selecting the Mobile VIL List pull down menu will display the following screen. To open a Mobile VIL <click> on the Mobile ID to highlight it and select the Open button or double <click> on the Mobile ID, or to add a new Mobile VIL, enter up to a new 8-digit alphanumeric phrase in the Mobile ID Box and <click> new.

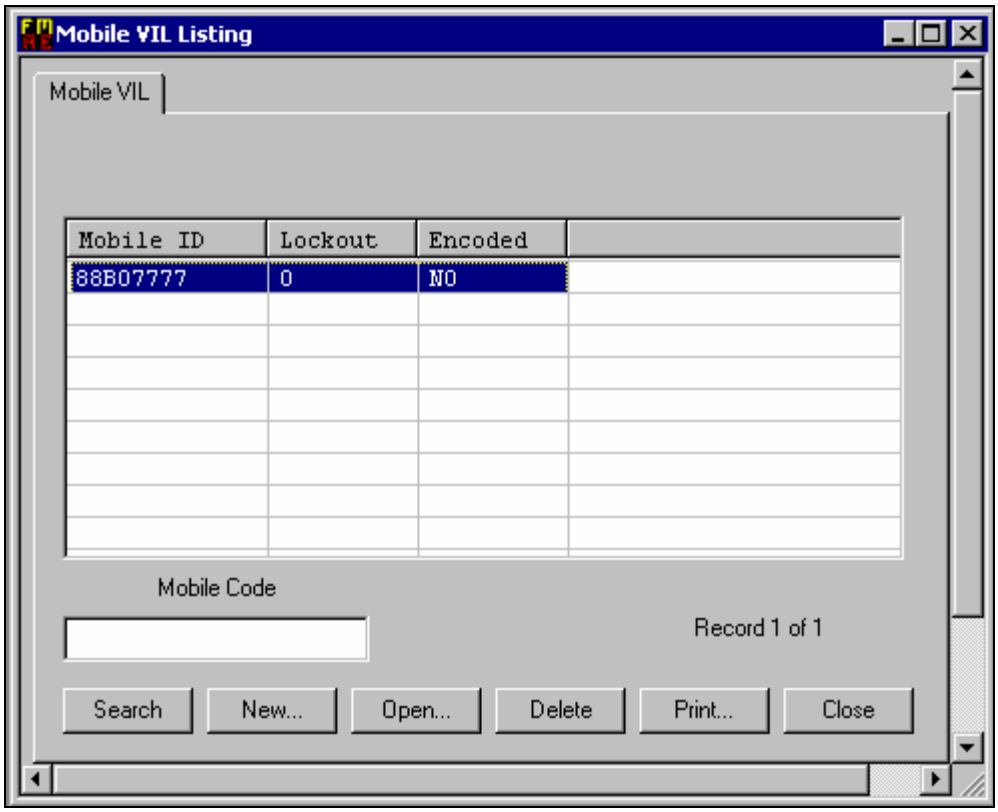


Figure 3-86, Mobile VIL Listing

Performing this action will display the Mobile VIL – DoD Standard window. The naming conventions (- DoD Standard) of this screen can change based upon the Service selected on the System Configuration Screen. The Mobile VIL - DoD Standard Window has one tab – General.

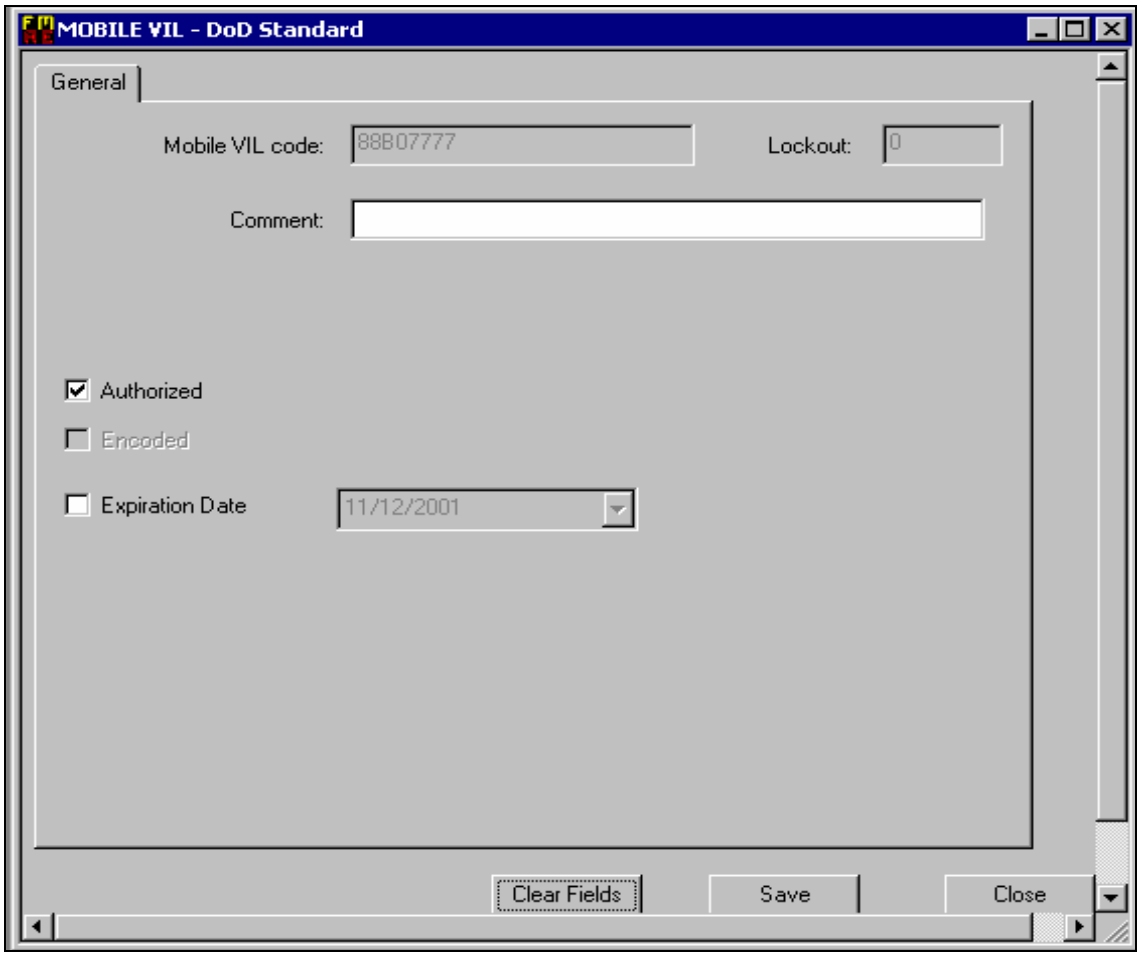


Figure 3-87, Mobile VIL – DoD Standard Screen

The Mobile VIL is similar to the Config VIL yet very different from Vehicle VILs in the DoDFM AE system. It is used to gain access to VIR configuration functions. The Config VIL must be in the VIL lockout list to be authorized for use (the opposite of all other VILs). A description of the fields on the Config VIL – DoD Standard screen are provided below:

Comment Field
Although an optional field, it is intended as a place to store information about who is responsible for Config VIL so it can more easily be identified and should locking it out become necessary.

Authorized Check Box
Check the Authorized check box to permit encoding of the VIL. If the Authorized check box is not checked the data will not be presented for encoding a VIL.

Encoded check box
This check box indicates if the VIL has been encoded. If encoded, the encode date is listed to the right.

Expiration Date
An Expiration Date Check Box is provided so that VILs may be encoded with an expiration date. In this manner, VILs automatically expire the day after the expiration date. To add an expiration date check the Expiration Date Check Box and using the Expiration Date Combo Box select a date.

Lockout #
The lockout number is a unique program assigned number that permits the locking out (non-use) of a specific VIL. The lockout number permits the locking out of a Config VIL and the re-encoding of a new VIL using the same Configuration VIL Code and data used on the locked out Config VIL. Used primarily for lost or stolen Vils.

Display VIL Contents

The Display VIL Contents option provides the user a view of the data that is currently encoded on a specific VIL. From the DoDFM AE desktop, Click on the VIL Operation pull down menu and then Click Display VIL Contents.

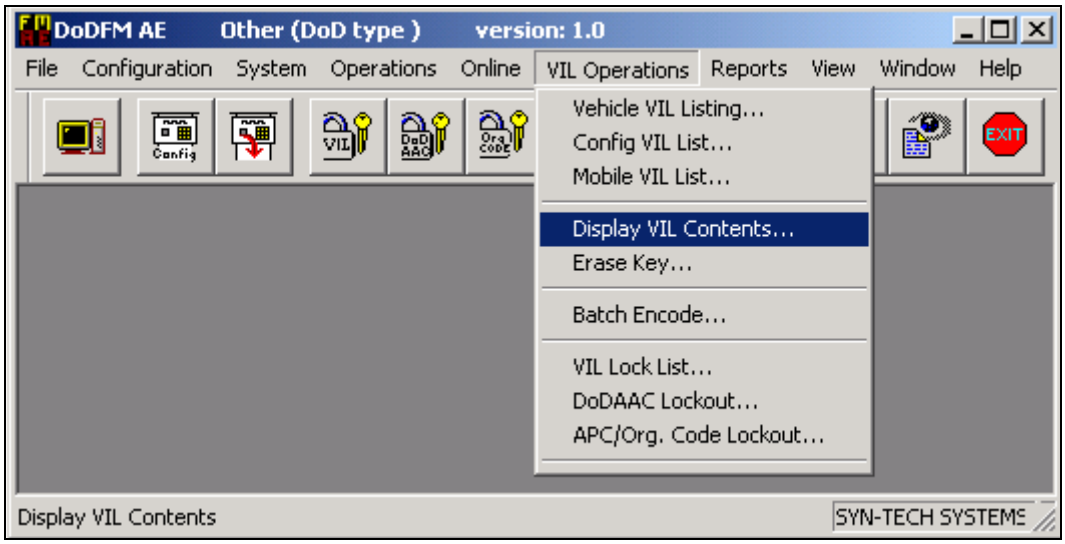


Figure 3-88, DoDFM AE Main Menu – Display VIL Contents

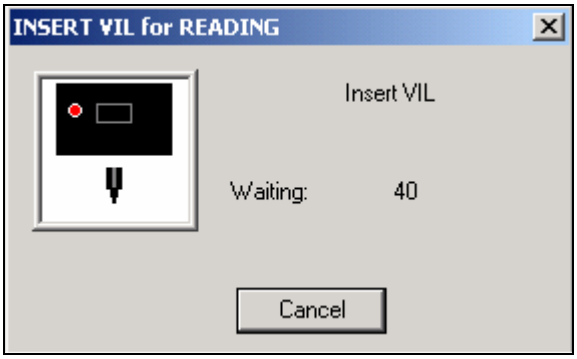


Figure 3-89, Insert VIL for Reading Screen

Insert the VIL to be encoded into the VIL Encoder, press and hold the VIL in the VIL receptacle. Upon successful encoding DoDFM AE will display the appropriate Vehicle, Config, or Mobile Window with the data read from the VIL.

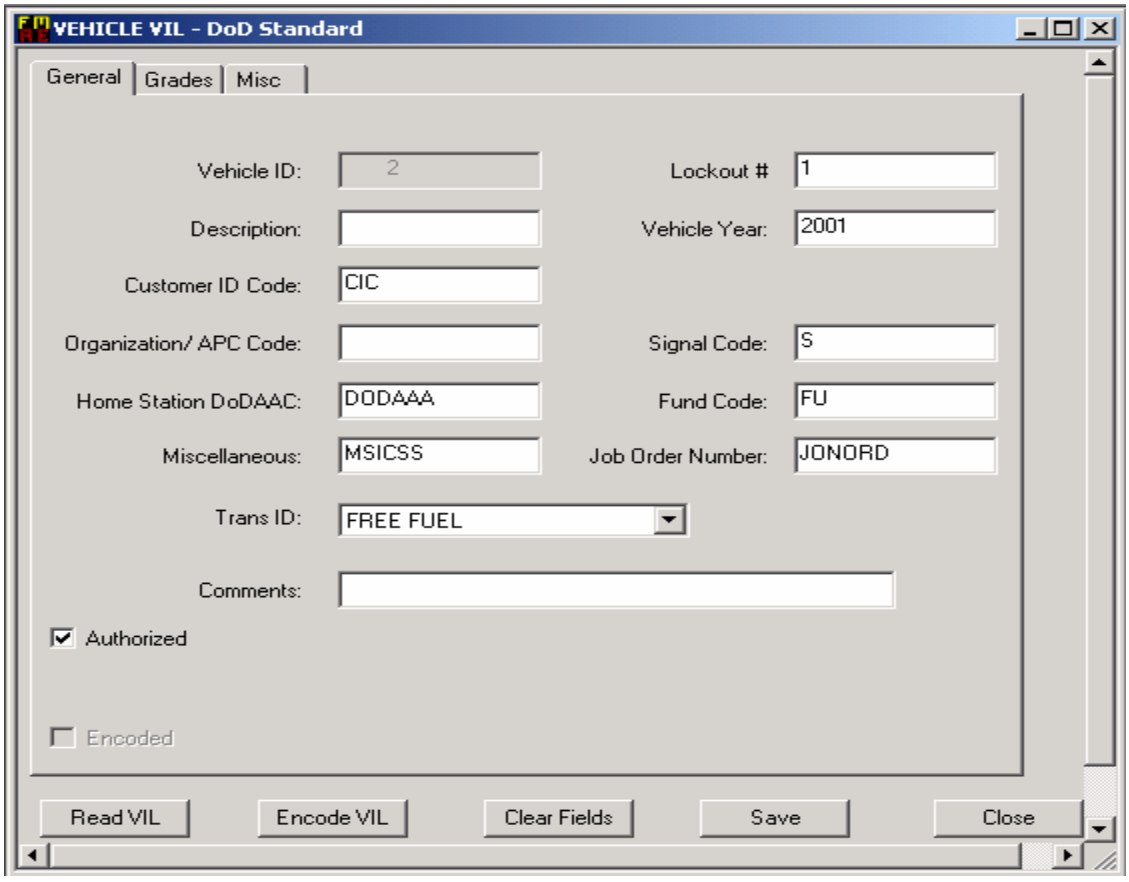


Figure 3-90, Vehicle VIL – DoD Standard Screen

Erase Key

The Erase Key option provides the user the capability to erase a VIL. This is particularly helpful if the VIL no longer needs to be maintained on the lockout lists thus reducing lockout list size and on-line time.. From the DoDFM AE desktop, Click on the VIL Operation pull down menu and Click Erase Prokee.

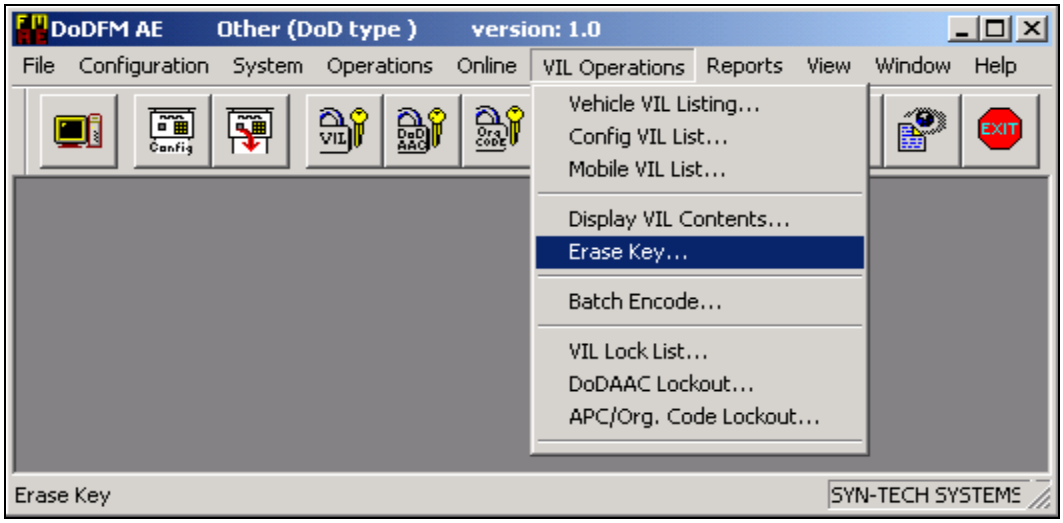


Figure 3-91, DoDFM AE Main Menu – Erase Key

The DoDFM AE application will display a warning when the Erase Key option is selected notifying the user that this is an irrevocable event should the user proceed.

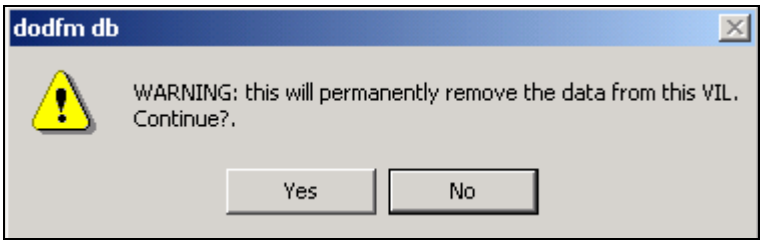


Figure 3-92, Erase VIL Warning Screen

Once the user selects Yes, the user is prompted to insert VIL to erase the contents.

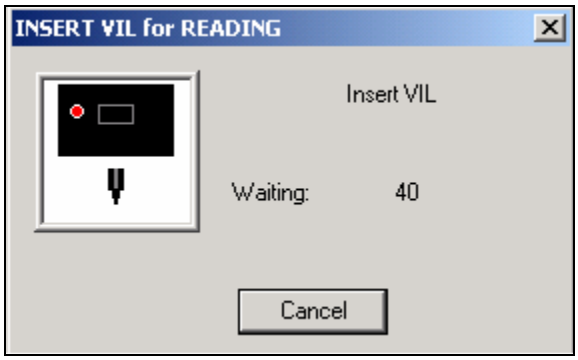


Figure 3-93, Insert VIL for Reading Screen

Insert the VIL to be encoded into the VIL Encoder and press and hold the VIL in the VIL Encoder. Upon successful completion DoDFM will display the results of the action.

Figure 3-94, VIL Erased Screen

Batch Encode

The Batch Encode option provides the user the capability to input data for multiple VILs without the need to encode the VIL each time the data is enetered. In a network situation, one person can enter data for the VILs and another can encode the VILs through the Batch Encode feature. From the DoDFM AE desktop, Click on the VIL Operation pull down menu and Click Batch Encode.

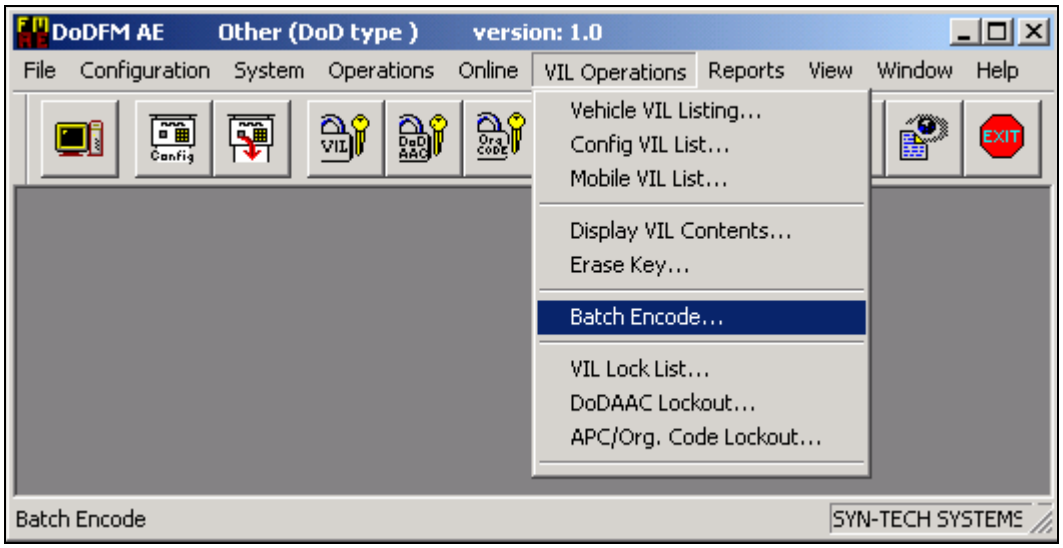


Figure 3-95, DoDFM AE Main Menu – Batch Encode

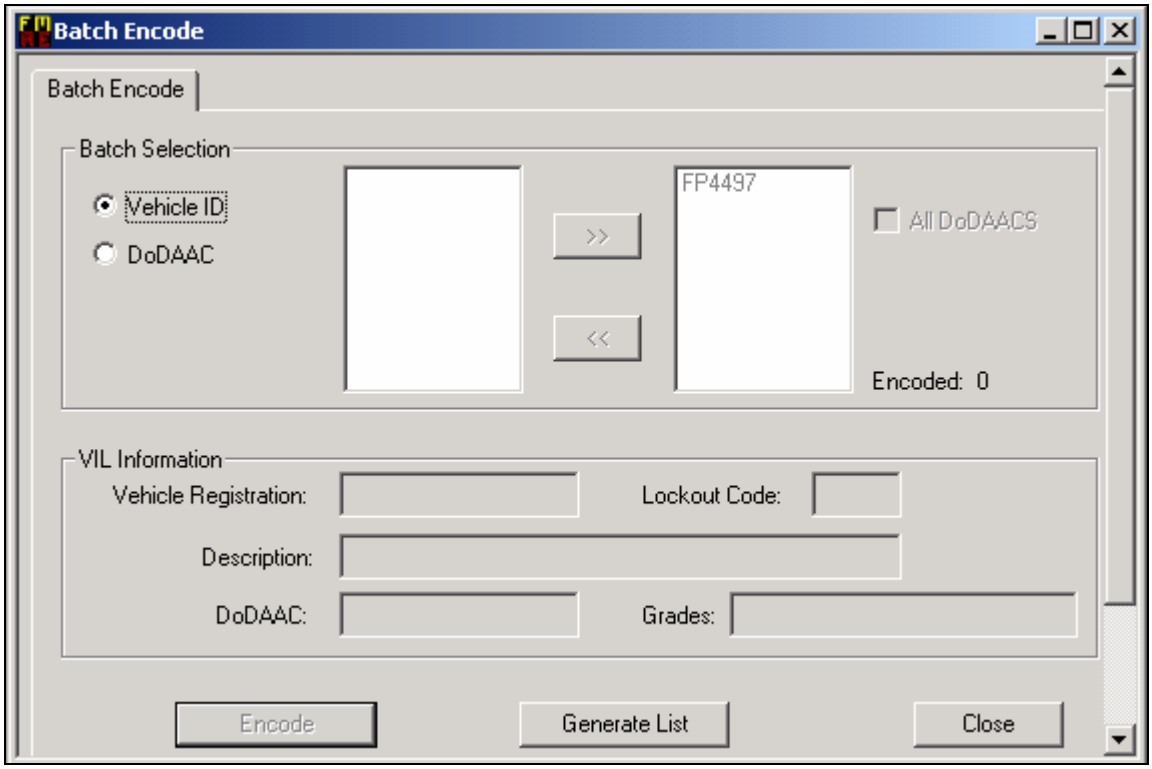


Figure 3-96, Batch Encode Screen

When the batch encode screen is displayed the user has the option to batch encode based upon vehicle ID or by DoDAAC. Selecting Vehicle ID will sort VILs, by Vehicle ID, that have not yet been encoded. Selecting DoDAAC will sort VILs based upon which DoDAAC is selected. This option is particularly helpful when encoding VILs for a specific DODAAC. Select which method is needed and then select the Generate List button.

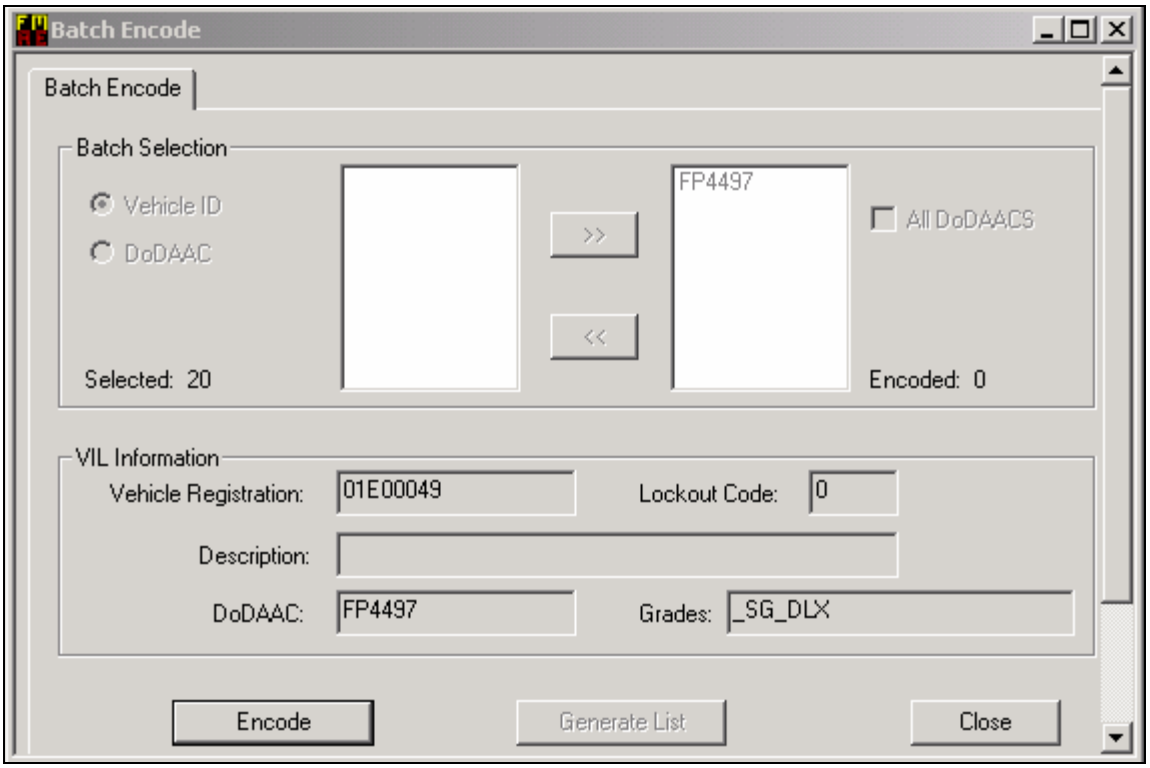


Figure 3-97, Batch Encode Generated List Screen

The data in the VIL Information block of the Batch Encode screen are automatically changed to the next vehicle when a VIL has been successfully encoded.

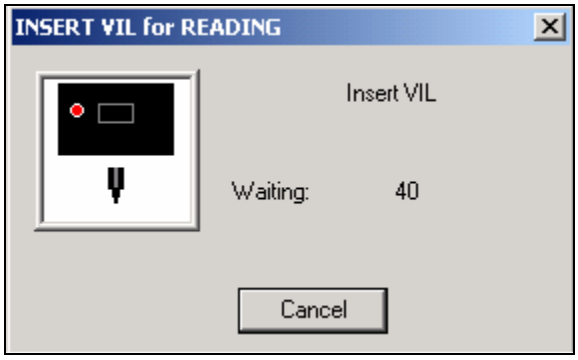


Figure 3-98, Insert VIL for Reading Screen

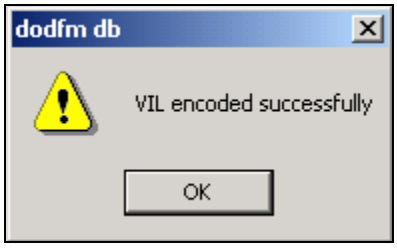


Figure 3-99, VIL Encoded Successfully Screen

VIL Lock List

The VIL Lock List provides the necessary input screen to lock out a VIL. From the DoDFM AE desktop, <click> on the VIL Operations pull down menu and <click> on VIL Lock List.

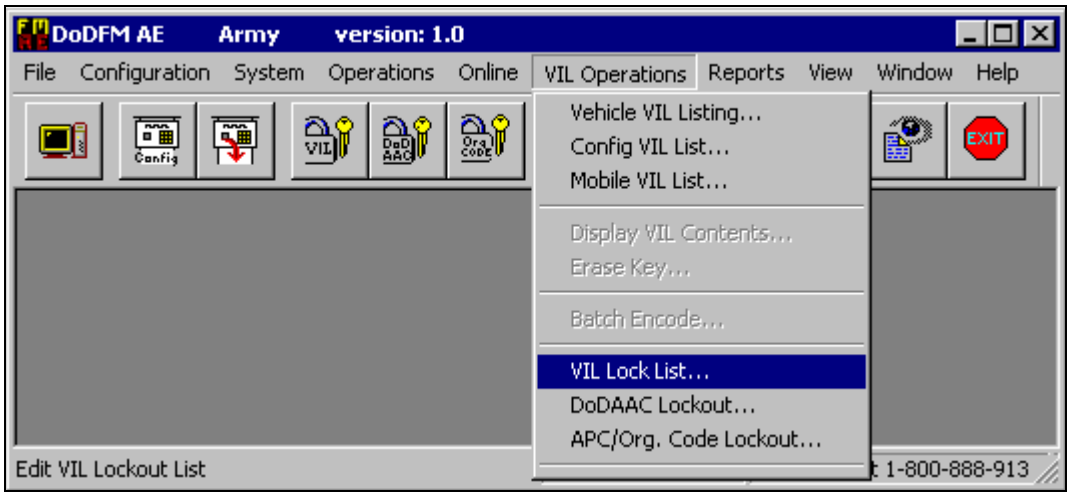


Figure 3-100, DoDFM AE Main Menu – VIL Operations- Mobile VIL List

There are two ways to add or remove VILs from the VIL Lock List: via the VIL Lock List or via the individual Vehicle record's Misc Tab page Authorization Check Box. In the below example there are two Vehicle IDs listed whose records have been deleted from the database. The only way to remove them from the lockout list is via the VIL Lock List Delete button.

Regardless of the method, adding a Vehicle ID to the lockout list is only half the de-authorization process. The process to "lockout" or "de-authorize" a VIL is a two step process:

The first step is to add the vehicle to the lockout list. This may be accomplished via the VIL Lock List or via the individual Vehicle record's MISC Tab page Authorization Check Box. To lockout a vehicle via the VIL Lock List, enter up to the vehicle's 8-digit alphanumeric Vehicle ID in the Vehicle ID box, enter the vehicle's 2-digit numeric lockout (16 maximum, or an asterisk will cause all 16 options to be locked out), and <click> New. To delete a vehicle highlight a vehicle and <click> the Delete button.

The second step is to send the list to the VIR. This step is accomplished via an "online" session. See Download in the Online pull down menu.

Mobile units will not receive the updated locklists until they are downloaded to a fixed site VIR or directly dial up and uploaded by DoDFM AE.

A vehicle does not need to exist in the database in order to lock it out. If the vehicle is not in the database, the vehicle's lock out number may not be known. An asterisk in the lockout box will cause all 16 options to be locked out.

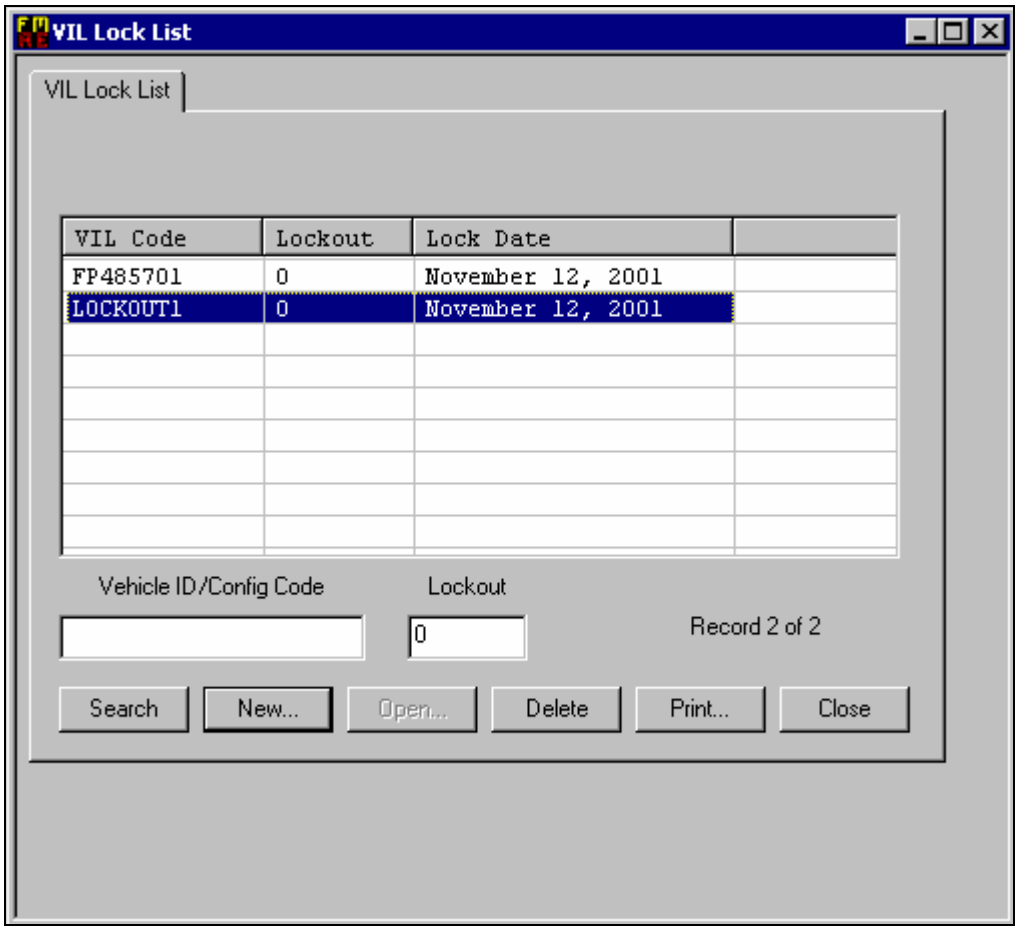


Figure 3-101, VIL Lock List Window

DoDAAC / Org Code Lockout

The DoDAAC Org Code Lock List provides the necessary input screen to lock out a DoDAAC, Org Code, or combination of both. From the DoDFM AE desktop, <click> on the **VIL Operations** pull down menu and <click> on **DoDAAC Org Code Lockout**.

Figure 3-102, VIL Operations- DoDAAC Org Code Lockout Menu

DoDACC Lockout

The process to “lockout” or “deauthorize” a DoDAAC is a two step process:

The first step is to add the DoDAAC to the lockout list. This is accomplished via the DoDACC Org Code Lockout List’s **New** button. The second step is to send the list to the VIR. This step is accomplished via an “online” session. **See Figure 3-105**.

Mobile units will not receive the updated lock lists until they are downloaded to a fixed site VIR or directly dialed up and uploaded by DoDFM AE.

To lockout an entire DoDAAC (6A/N), <click> **New** and enter the 6-digit alphanumeric DoDAAC to be locked out in the DoDAAC Box, leave the % sign in the Org Code (This tells the software to lockout the DoDACC no matter what the Org code is), and <click> **Save**. To delete an entry in the DoDAAC Org Code Lockout, highlight the entry in the list and <click> the Delete button.

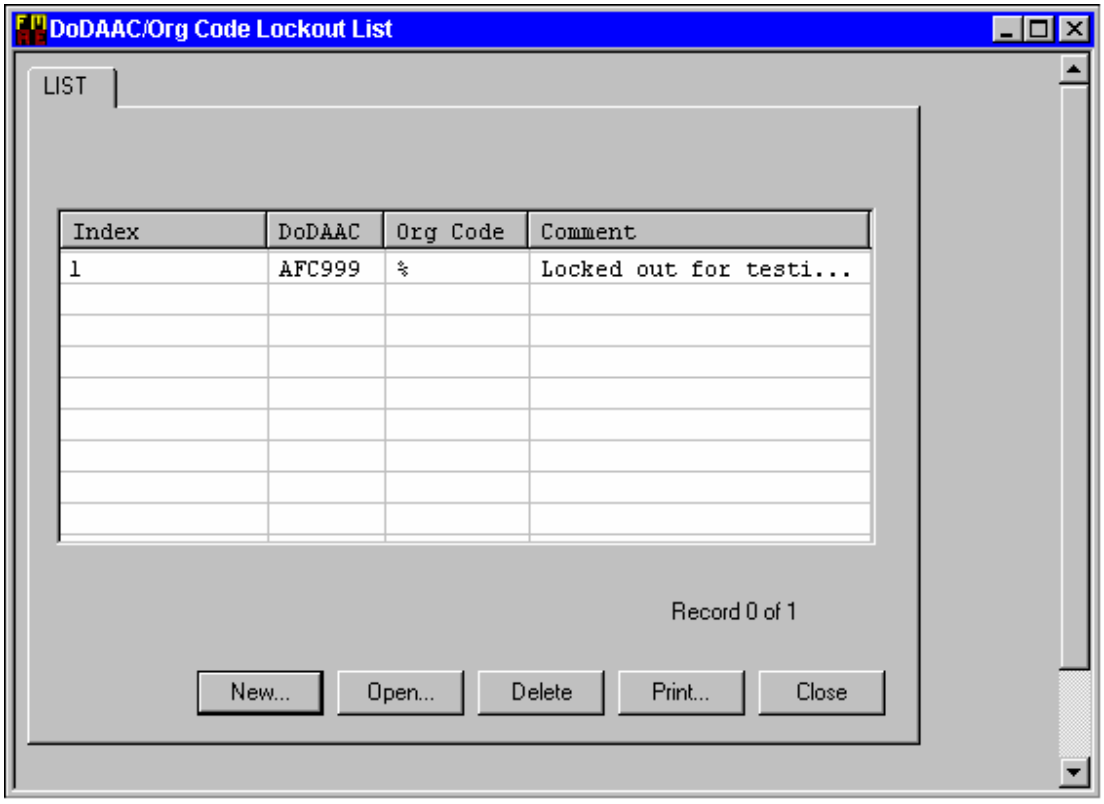


Figure 3-102, DoDAAC Org Code Lockout List

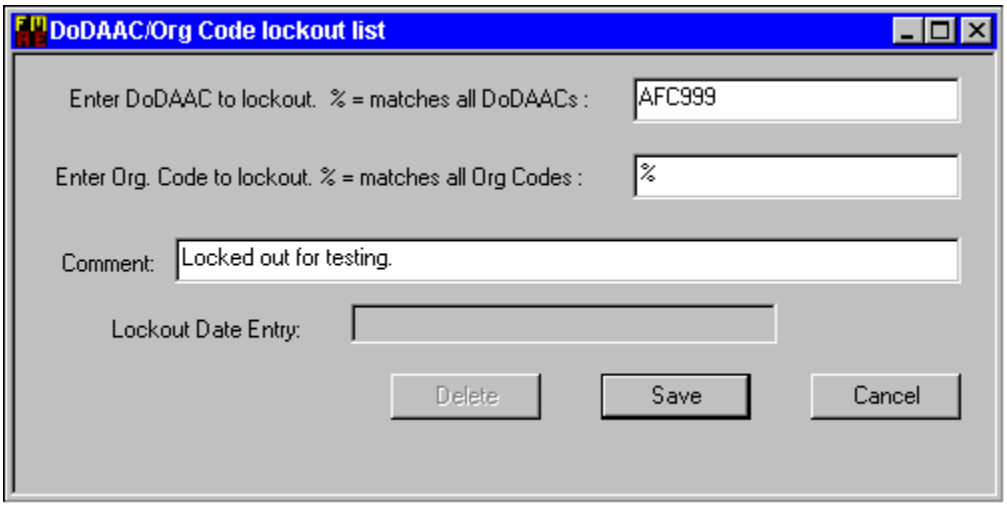


Figure 3-103, New DoDAAC Org Code Lockout

APC/Org.Code Lockout

The DoDAAC Org Code Lockout List provides the necessary input screen to lock out an APC or Org. Code. From the DoDFM AE desktop, <click> on the VIL Operations pull down menu and <click> on DoDAAC Org Code Lockout.

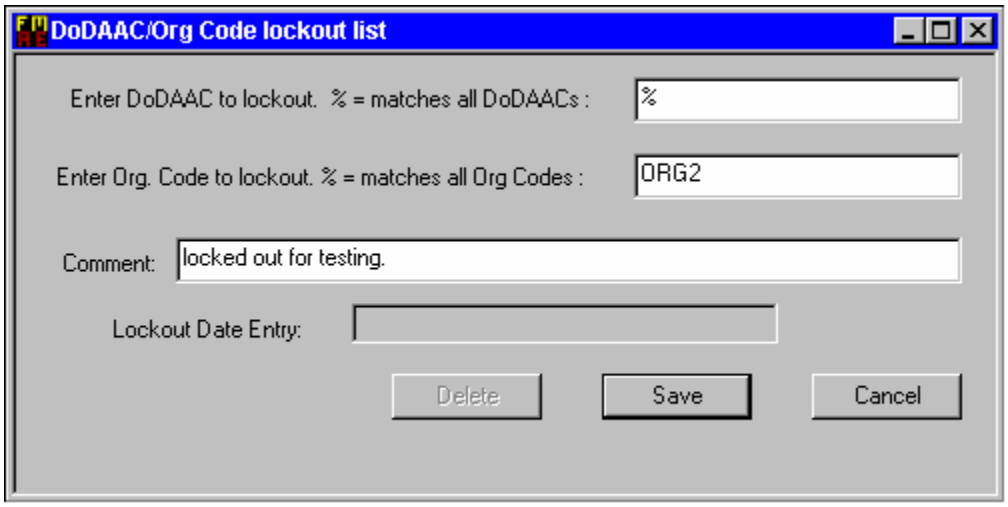


Figure 3-104, VIL Operations- DoDAAC Org Code Lockout

The process to “lockout” or “deauthorize” an APC/Org. Code is a two step process:

The first step is to add the APC/Org. Code to the lockout list. This is accomplished via the DoDAAC Org Code Lockout List’s **New** button. The second step is to send the list to the FMU. This step is accomplished via an “online” session. **See Figure 3-105**

Mobile units will not receive the updated lock lists until they are downloaded to a fixed site VIR or directly dialed up and uploaded by DoDFM AE.

To add a new APC/Org. Code (4A/N), <click> **New**, enter up to a 4-digit alphanumeric number to be locked out in the APC/Org. Code Box, leave the % sign in the DoDAAC box, and <click> **Save**. To delete an APC/Org. Code highlight an APC/Org. Code and <click> the Delete button.

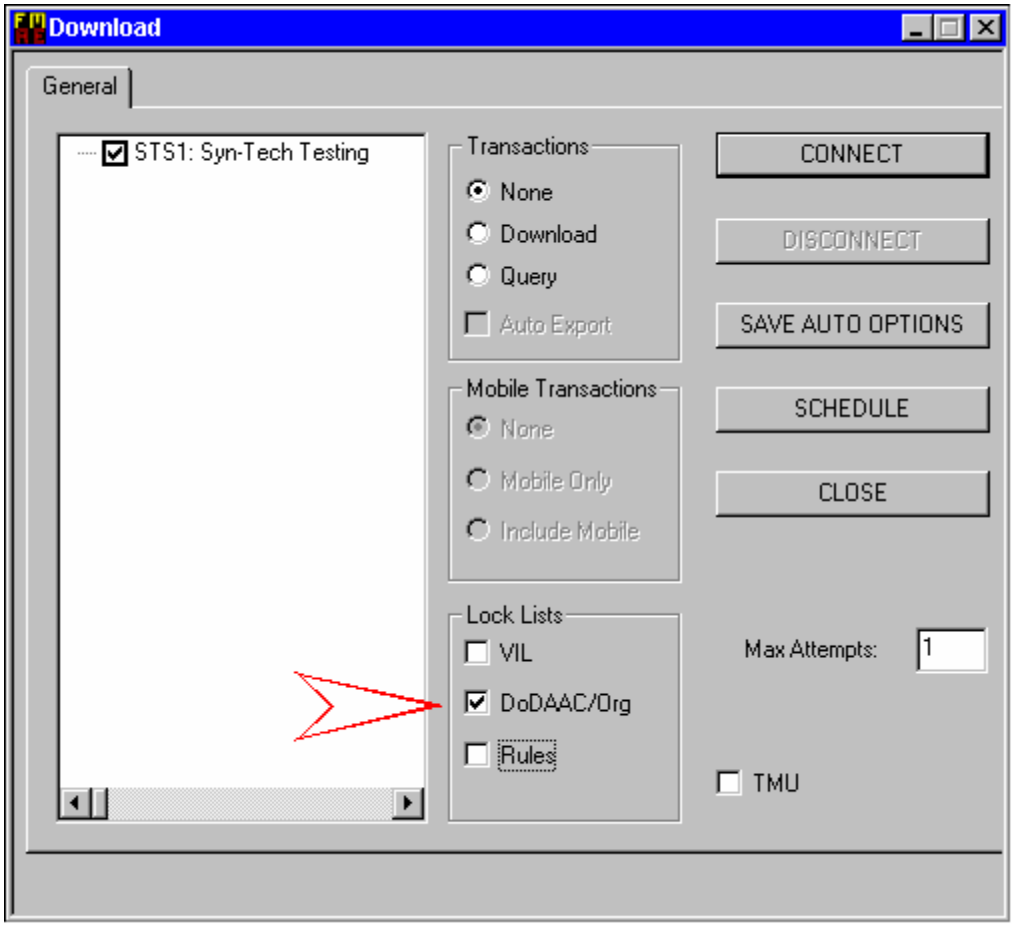


Figure 3-105, Online Menu -> Download Dialog

Reports Menus

DoDFM AE offers 12 basic reports including the Active Ledger report. The 12 reports offer a myriad of different variations that can be used to customize reports for the user's specific needs. From the DoDFM AE desktop, <click> on the Report pull down menu, highlight the desired type of report and <click> on the desired sort method/feature.

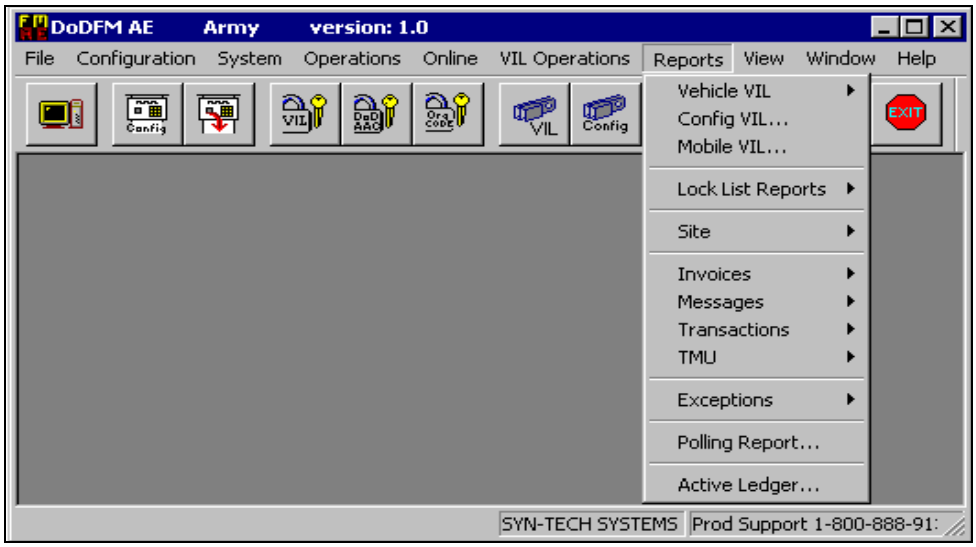


Figure 3-106, DoDFM AE Main Menu, Reports

Vehicle VIL Report

The vehicle VIL report provides data relevant to VILs within the DoDFM AE database. There are four reports available; Vehicle Listing, Authorized, Unauthorized and efficiency. From the Report pull down menu select Vehicle listing.

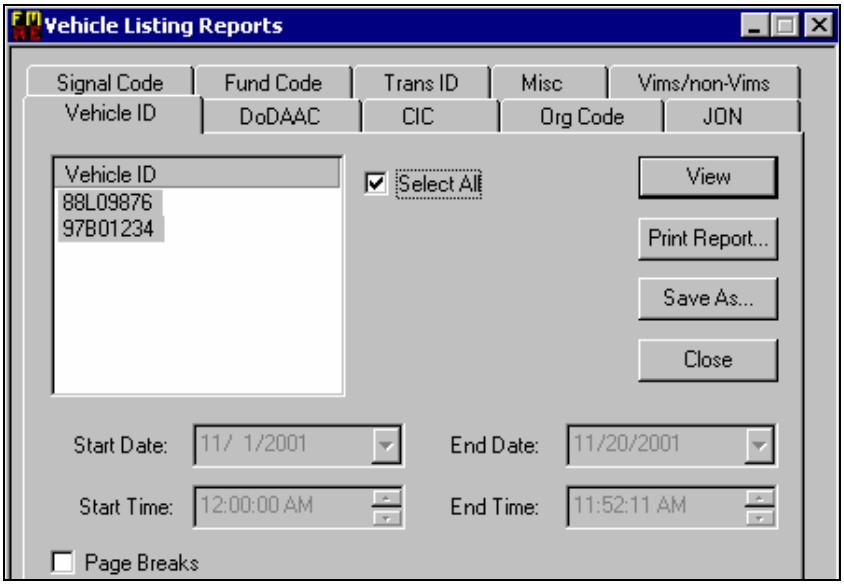
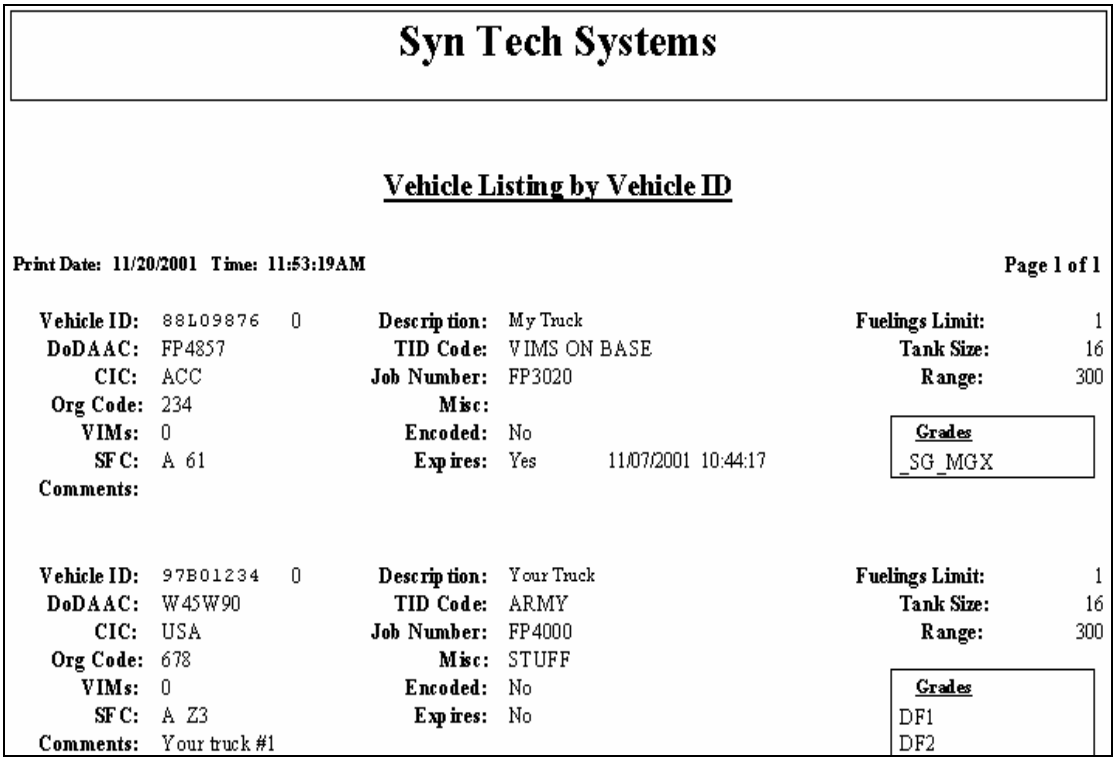


Figure 3-107, Vehicle Listing Reports

The Vehicle Listing Report is typical of the DoDFM AE Vehicle windows screen in that it possesses ten tab pages at the top of the screen, as do all of the Vehicle VIL reports. The tab pages provide different primary sort parameters for the Vehicle VIL data as indicated by the tab

name. A Select All check box is provided that will highlight all data as portrayed by the tab name. A Page Breaks check box is provided to permit logical page breaks in the event the data should be printed. Select one or more vehicle ID's (tab name) and select the View Button to view the report on the screen or select Print Report to send the report to a printer (check the Page Breaks check box) or select Save As to save the report to file.



Syn Tech Systems

Vehicle Listing by Vehicle ID

Print Date: 11/20/2001 Time: 11:53:19AM **Page 1 of 1**

Vehicle ID:	88L09876 0	**Description:**	My Truck		**Fuelings Limit:**	1
DoDAAC:	FP4857	**TID Code:**	VIMS ON BASE		**Tank Size:**	16
CIC:	ACC	**Job Number:**	FP3020		**Range:**	300
Org Code:	234	**Misc:**				
VIMs:	0	**Encoded:**	No		**Grades**	
SFC:	A 61	**Expires:**	Yes	11/07/2001 10:44:17	_SG_MGX	
Comments:						

Vehicle ID:	97B01234 0	**Description:**	Your Truck		**Fuelings Limit:**	1
DoDAAC:	W45W90	**TID Code:**	ARMY		**Tank Size:**	16
CIC:	USA	**Job Number:**	FP4000		**Range:**	300
Org Code:	678	**Misc:**	STUFF			
VIMs:	0	**Encoded:**	No		**Grades**	
SFC:	A Z3	**Expires:**	No		DF1	
Comments:	Your truck #1				DF2	

Figure 3-108, Vehicle Listing Report by Vehicle ID

Config VIL Reports

The Config VIL report provides data relevant to Config (Configuration) VILs within the DoDFM AE database. The report provides the Config VIL ID, lockout code and the date the Config VIL was encoded.

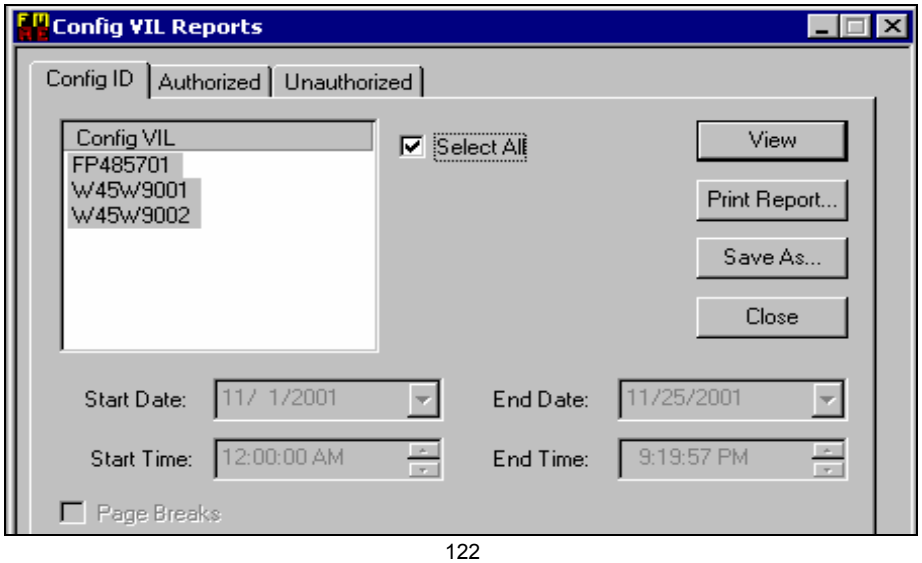


Figure 3-109, Configuration VIL Reports

Mobile VIL Reports

The Mobile VIL report provides data relevant to Mobile VILs within the DoDFM AE database. The report generation screen possesses three tab pages at the top of the screen; Mobile ID, Authorized and Unauthorized. The tab pages provide different primary sort parameters for the Mobile VIL data as indicated by the tab name. A Select All check box is provided that will highlight all data as portrayed by the tab name. A Page Breaks check box is provided to permit logical page breaks in the event the data should be printed. Select one or more Mobile ID's (tab name) and select the View Button to view the report on the screen or select Print Report to send the report to a printer (check the Page Breaks check box) or select Save As to save the report to file.

.

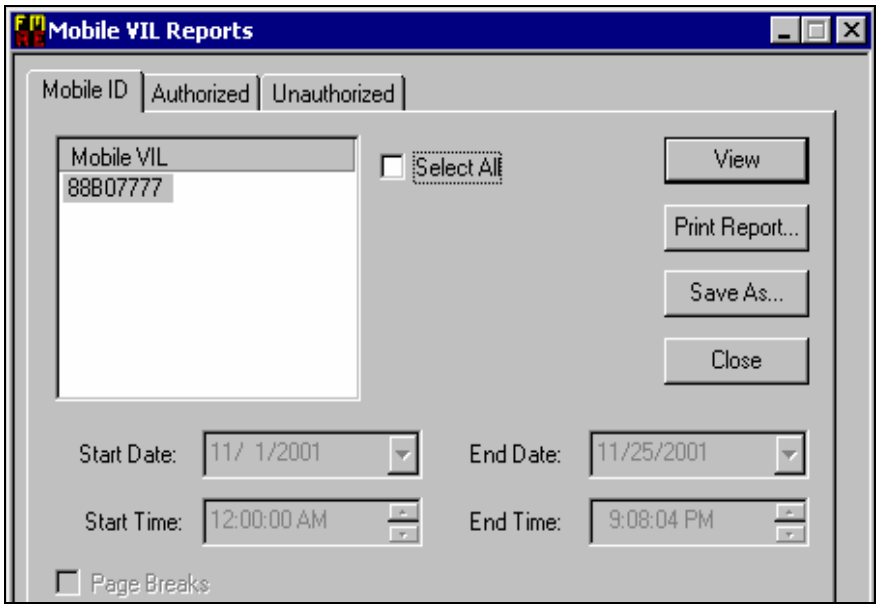


Figure 3-110, Mobile VIL Reports

Syn Tech Systems

Mobile VIL Listing

Print Date: 11/25/2001 Time: 21:16:07 **Page 1 of 1**

Code	Lockout	Encoded	Expire	Comment
88B07777	0	No	No	

Figure 3-111, Mobile VIL Listing Report

Lock List Reports

The Lock List reports provide data relevant to Vehicle, DoDAAC and Organization Code (Air Force)/Account Processing Code (APC – Army) that have been locked out of the FuelMaster system at a specific location/site.

Figure 3-112, DoDFM AE Main Menu, Reports, Lock List Reports

The report generation screen permits the user to select specific vehicle ID's, DoDAAC's or Organization Codes/APC's. A Select All check box is provided that will highlight all data for a specific report. A Page Breaks check box is provided to permit logical page breaks in the event the data should be printed. Select one or more Vehicle ID's, DoDAAC's or Org. Codes/APC's and select the View Button to view the report on the screen or select Print Report to send the report to a printer (check the Page Breaks check box) or select Save As to save the report to file.

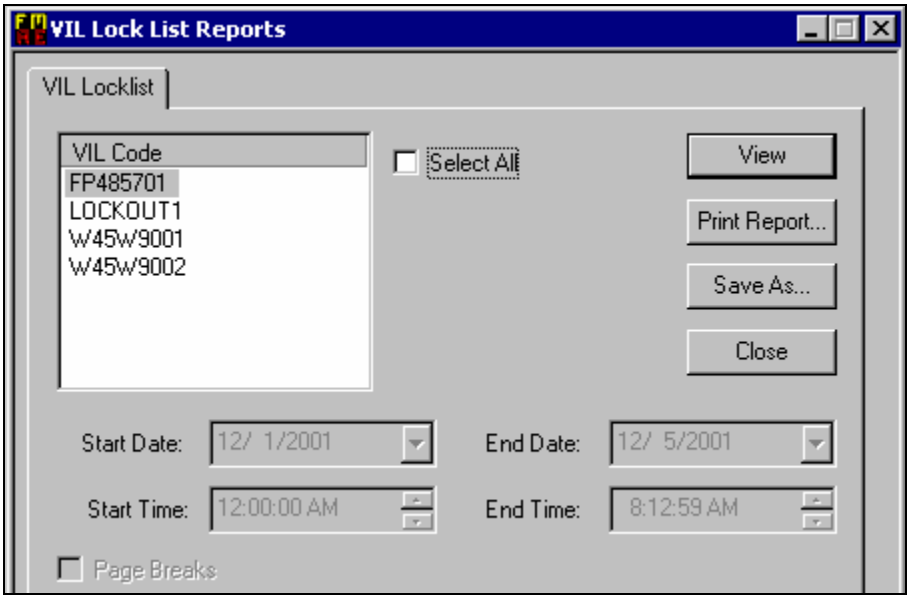
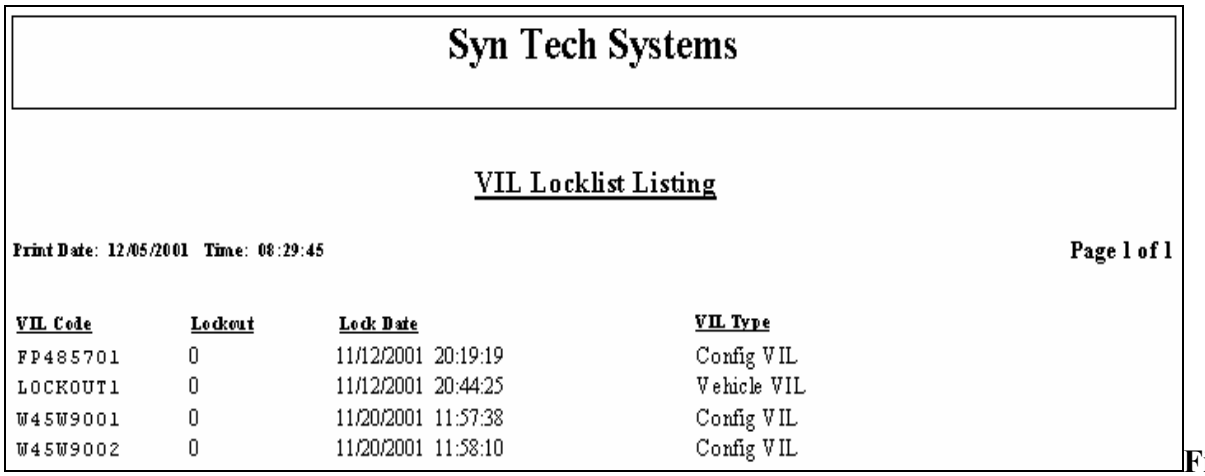


Figure 3-113, Lock List Reports Generation Screen



Syn Tech Systems

VIL Locklist Listing

Print Date: 12/05/2001 Time: 08:29:45 Page 1 of 1

VIL Code	Lockout	Lock Date	VIL Type
FP485701	0	11/12/2001 20:19:19	Config VIL
LOCKOUT1	0	11/12/2001 20:44:25	Vehicle VIL
W45W9001	0	11/20/2001 11:57:38	Config VIL
W45W9002	0	11/20/2001 11:58:10	Config VIL

Figure 3-114, Mobile VIL Listing Report

Site Reports

The Site reports provide data relevant to the configuration of each site. The configuration of each VIR (Master and Satellites) are provided.

Figure 3-115, DoDFM AE Main Menu, Reports, Site Reports

The Site report generation screen permits the user to select a specific FuelMaster Site or multiple sites to display configuration data, Inventory History data, Site Delivery Data and VIR activity. A Select All check box is provided that will highlight all Sites for a specific report. A Page Breaks check box is provided to permit logical page breaks in the event the data should be printed. Select one or more Sites and select the View Button to view the report on the screen or select Print Report to send the report to a printer (check the Page Breaks check box) or select Save As to save the report to file.

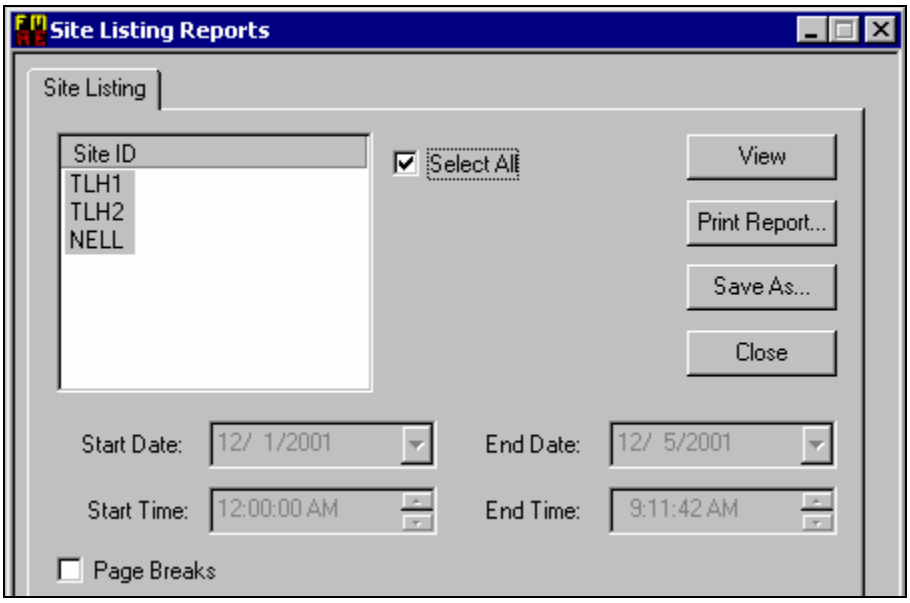


Figure 3-116, Site Listing Report Generation Screen

Site Listing

Print Date: 12/5/2001 Time: 9:21:46AM **Page 3 of 3**

Site ID: TLH1

Address1:
Address2:

Tank	Grade	UI	Inventory	Inventory Date	Capacity	Reorder	Vendor
2	MG1	GL	18,801.00		20,000.00	4,000.00	

VIR Configuration for Site ID TLH1

Site ID: TLH1 Unit Name: Master

Seller DoDAAC:	DODAAC	**Message Duration:**	4
RIC:	RIC	**Modem Begin:**	0
Max Zero Trans:	5	**Modem End:**	24
Julian Rollover:	0	**User Options:**	0
Key Timeout:	20	**System Options:**	0

Hose	Tank	Grade	UI	Divide Rate	NPTO	PFTO	Pump Handle
1	1	DF2	GL	100 : 1	20	10	No

Site ID: TLH1 Unit Name: Sat No. 1

Seller DoDAAC:	DODAAC	**Message Duration:**	4
RIC:	RIC	**Modem Begin:**	0
Max Zero Trans:	5	**Modem End:**	24
Julian Rollover:	0	**User Options:**	0
Key Timeout:	20	**System Options:**	148

Figure 3-117, Site Listing Report

Syn Tech Systems

Inventory History Report

Print Date: 12/5/2001 Time: 9:32:08 AM **Page 1 of 1**

Site ID: TLH1

Tank Number: 1

Date	Comments	Begin Inventory	End Inventory	Quantity
11/05/2001 10:01:05	Tank created	0.00	0.00	0.00
11/05/2001 10:34:59	Tank Capacity set -	0.00	0.00	12,000.00
11/05/2001 10:35:00	Tank Reorder amount set -	0.00	0.00	4,000.00
11/05/2001 10:35:00	Initial tank Inventory	0.00	0.00	0.00
11/05/2001 10:35:04	Delivery - Initial delivery	0.00	9,912.00	0.00
11/05/2001 10:36:36	Delivery - second delivery	9,912.00	10,012.00	0.00
11/30/2001 09:28:40	Active Ledger Entry: Ending Physical	0.00	0.00	11,490.00
11/30/2001 09:28:40	Active Ledger Entry: Ending Physical	0.00	11,490.00	11,490.00
11/30/2001 09:28:40	Active Ledger Entry: Ending Physical	0.00	11,490.00	11,490.00
11/30/2001 09:28:40	Active Ledger Entry: Ending Physical	0.00	11,490.00	11,490.00
11/30/2001 09:28:40	Active Ledger Entry: Ending Physical	0.00	11,490.00	11,490.00
11/30/2001 09:28:40	Active Ledger Entry: Ending Physical	0.00	11,490.00	11,490.00
11/30/2001 09:28:40	Active Ledger Entry: Ending Physical	0.00	11,490.00	11,490.00

Figure 3-118, Inventory History Report

Syn Tech Systems

Site Delivery Report

Print Date: 12/5/2001 Time: 9:36:45AM **Page 1 of 1**

Site ID: TLH1

Tank Number: 1

		Gallons	TC Gallons	Water	Temp	Height
Start:	12/5/2001 9:36:18AM	0.00	0.00	0.00	0.00	0.00
End:	12/5/2001 9:36:18AM	0.00	0.00	0.00	0	0.00
	Totals:	0.00	11,000.00	Manual Entry Delivery		

Figure 3-119, Site Delivery Report

Syn Tech Systems

VIR Activity from 01/01/01 00:00:00 to 12/05/01 09:38:42

Print Date: 12/5/2001 Time: 9:39:13AM Page 1 of 1

Site ID: TLH1

		Month to Date		Year to Date	
Hose	Grade	Transactions	Quantity	Transactions	Quantity
1	DF2	0	0.00	2	19.00
Totals for Site ID: TLH1		0	0.00	2	19.00

Figure 3-120, VIR Activity Report

Invoice Reports

The Invoice reports provide data relevant to the billable transactions generated by vehicle ID (Vehicle Information) or by Site. Use the Invoices by Vehicle Information report to ascertain the total number of fuelings and associated currency value performed by vehicle regardless of Site (Must set Grades pricing information first). Use the Invoices by Site report to ascertain the total number of fuelings and associated currency value (must set grades pricing information first) performed by each Vehicle Identification Number.

Figure 3-121, DoDFM AE Main Menu, Reports, Invoices

Vehicle Information

The Invoices by Vehicle Information Window is typical of all the Vehicle windows in that it has ten tab pages whereas the Sites, Messages, etc windows have only one to three tab pages (Tab pages equate to number of sort methods). Otherwise, the

Windows used to select reports are the same. The typical reports window has four buttons: View, Print Report, Save As and Close.

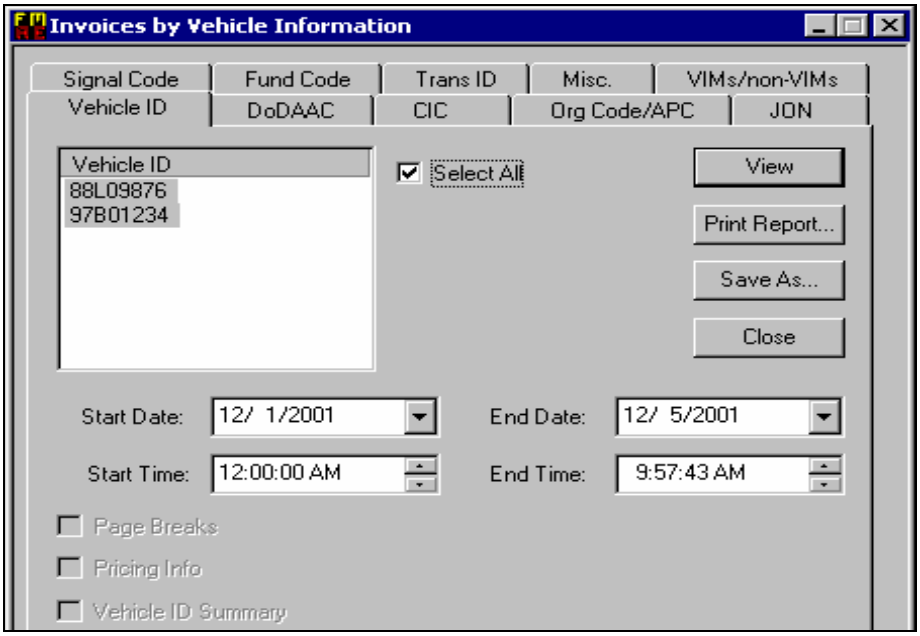
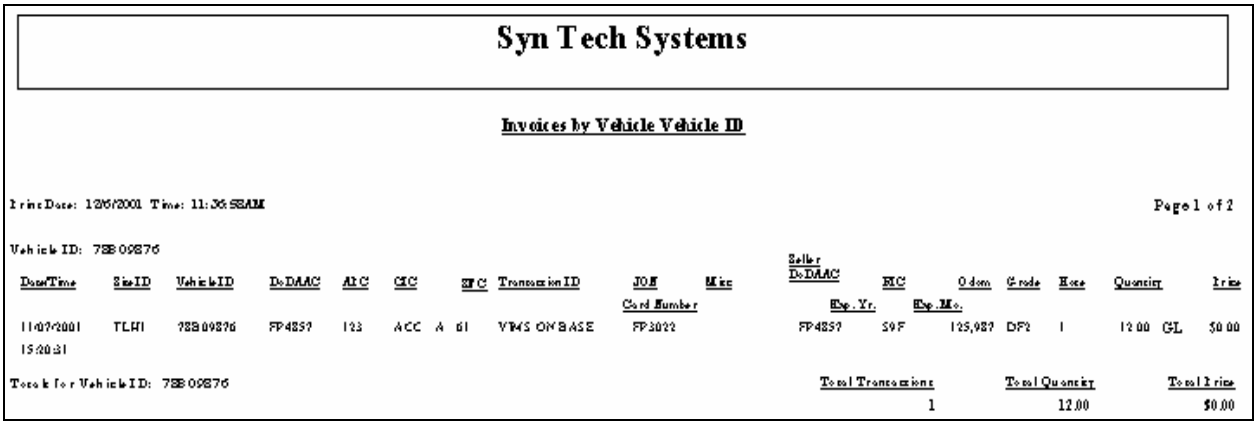


Figure 3-122, Invoices by Vehicle Information Generation Screen


Syn Tech Systems

Invoices by Vehicle Vehicle ID

Print Date: 12/6/2001 Time: 11:36:58AM Page 1 of 2

Vehicle ID: 78B09876

Date/Time	Site ID	Vehicle ID	DoDAAC	Alt C	CIC	SFC	Transaction ID	JON / Card Number	Misc	Seller DoDAAC	FIC	Exp. Yr.	Exp. Mo.	Odom	Grade	Hose	Quantity		Price
11/07/2001 15:20:31	TLH1	78B09876	FP4857	123	ACC	A	61	VIMS ON BASE		FP3022	FP4857	59F		125,987	DF2	1	12.00	GL	$0.00

Totals for Vehicle ID: 78B09876

Total Transactions	Total Quantity	Total Price
1	12.00	$0.00

Figure 3-123, VIR Activity Report

Site

The Invoices by Site Window stratifies data by vehicle ID per site. Use the Vehicle Summary check box to summarize data by vehicle. The typical reports window has four buttons: View, Print Report, Save As and Close.

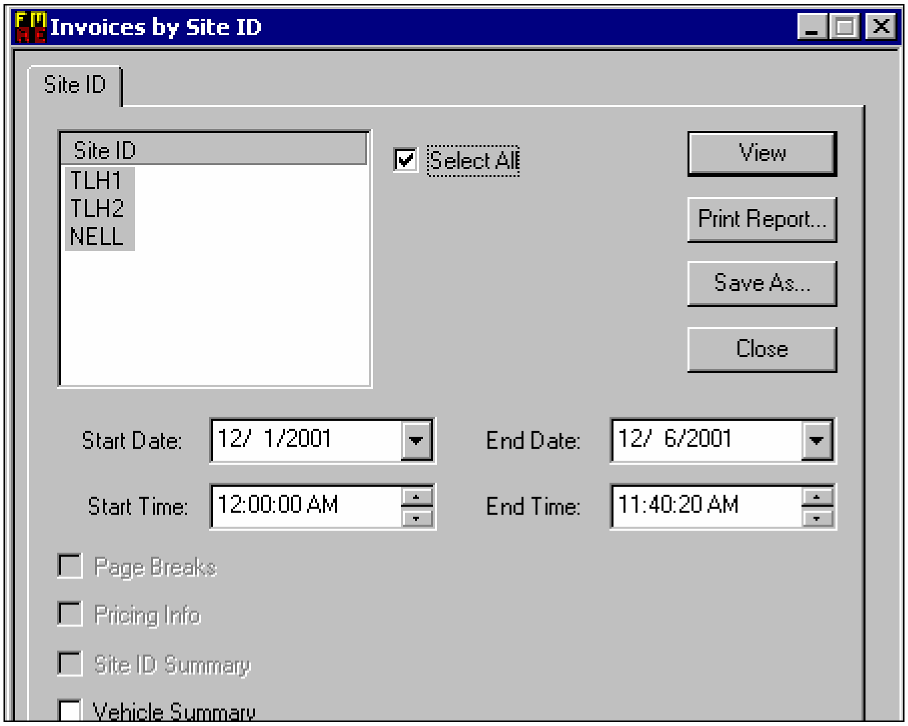


Figure 3-124, Invoices by Site Generation Screen

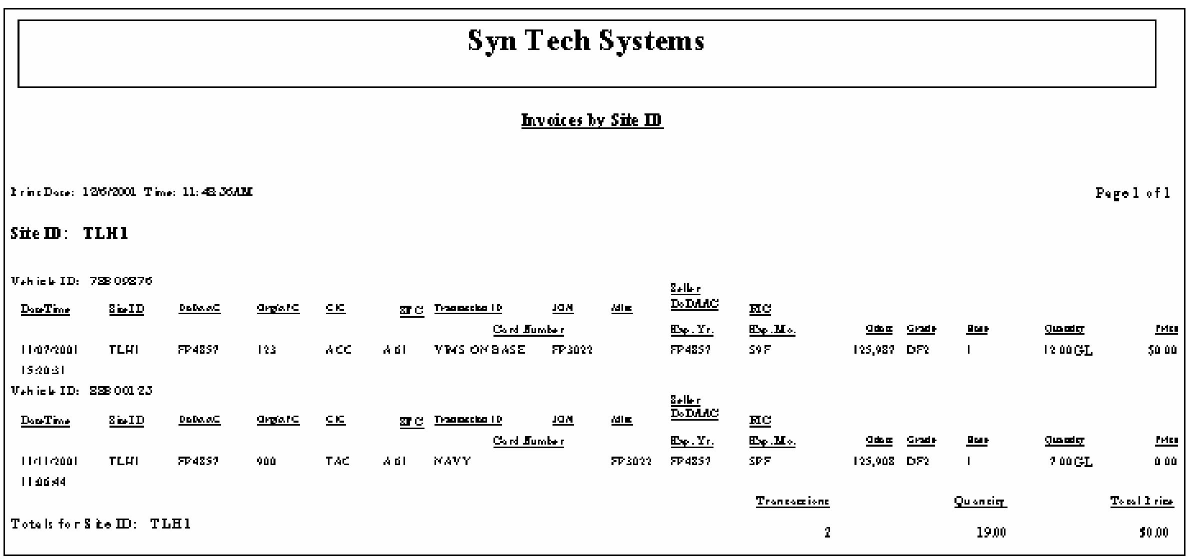


Figure 3-125, VIR Activity Report

Message Reports

The Message Reports provide data relevant to messages generated by the each VIR. Use the Message reports to ascertain VIR activity other than transactions. The typical Message reports window has four buttons: View, Print Report, Save As and Close. A Page Breaks check box is provided to permit logical page breaks in the event the data should be printed.

Message ID

The Message Report Message ID Window provides the capability to run reports based upon one or more specific messages spanning multiple sites. The typical Message reports window has four buttons: View, Print Report, Save As and Close. A Page Breaks check box is provided to permit logical page breaks in the event the data should be printed.

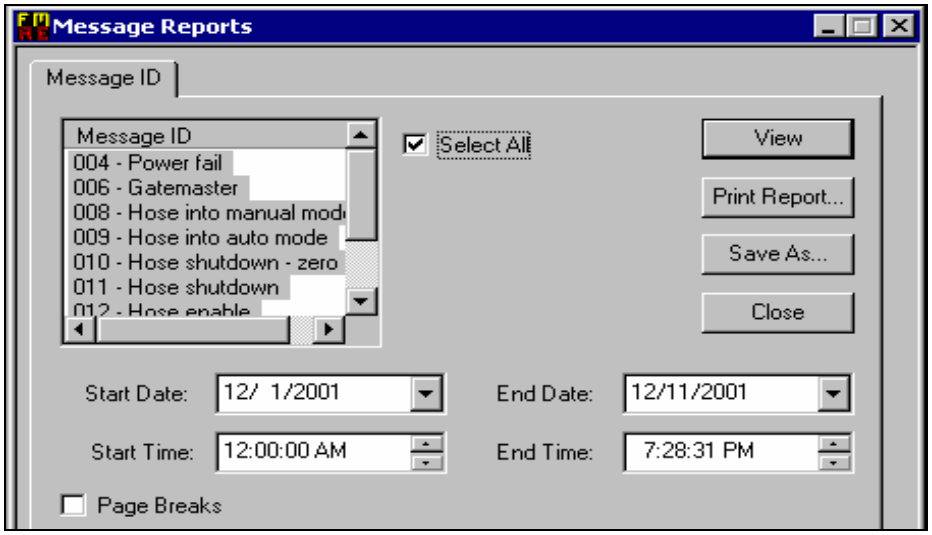


Figure 3-126, Message Reports by Message ID Generation Screen

Site ID

The Message Report Site ID Window provides the capability to run reports based upon all message ID's spanning one or more specific sites. The typical Message reports window has four buttons: View, Print Report, Save As and Close. A Page Breaks check box is provided to permit logical page breaks in the event the data should be printed.

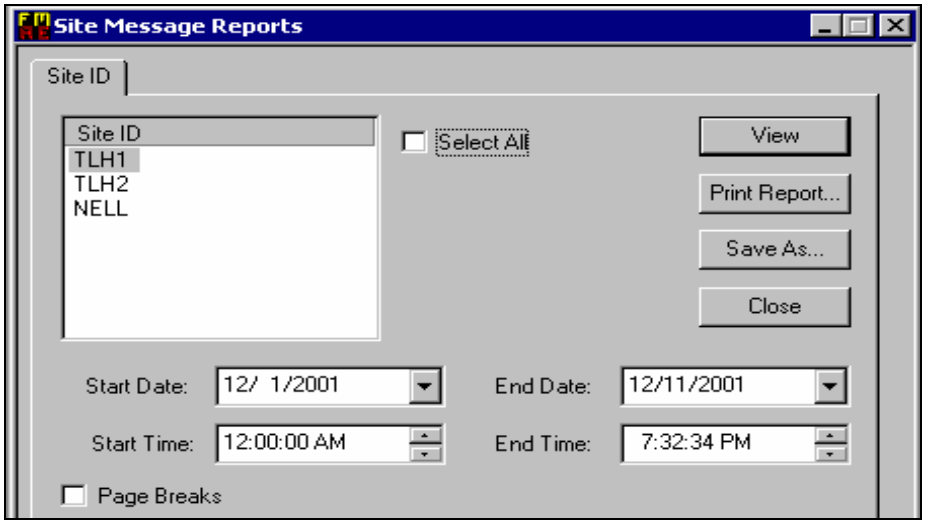


Figure 3-127, Message Reports by Site ID Generation Screen

Transactions Reports

The Transaction Reports provide data based upon transactional data. Transaction reports can be run/sorted by Vehicle Information, Site ID, Transaction Code, Batch and Transaction Code.

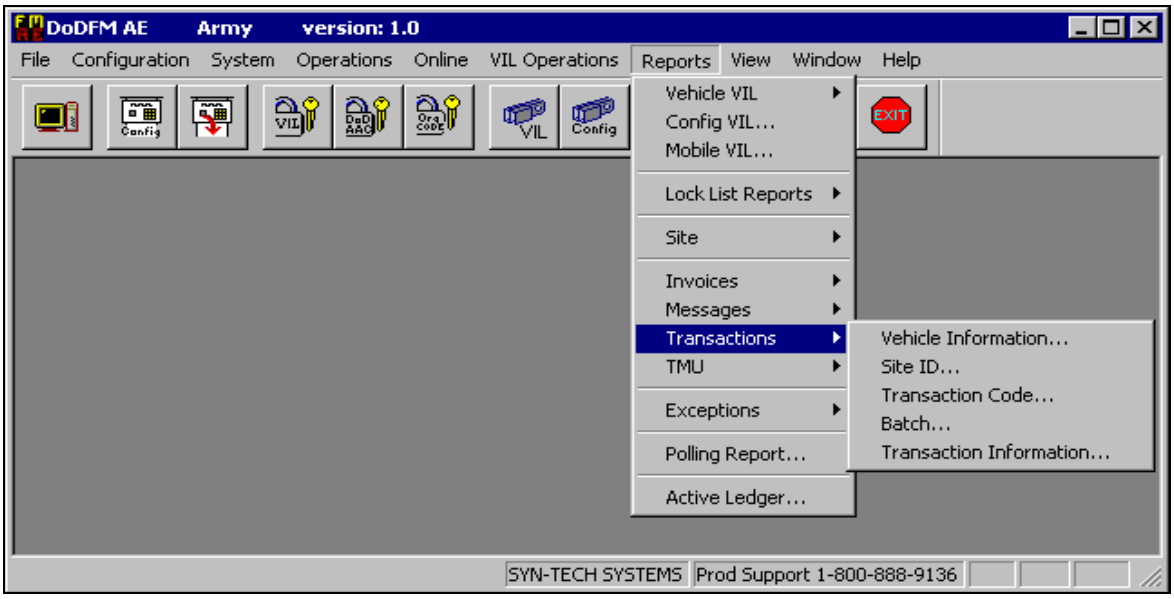


Figure 3-128, DoDFM AE Main Menu, Reports, Transactions

Vehicle Information

The Transaction Report by Vehicle Information possesses ten tab pages. (Tab pages equate to number of sort methods). The Vehicle Information report window has four buttons: View, Print Report, Save As and Close. Start and End Dates and Times are provided to cover specified ranges. A Page Breaks check box is provided to permit logical page breaks in the event the data should be printed. In addition, pricing information can be selected via check box and printed on the report. A Vehicle ID Summary button is provided to enable an additional sort parameter.

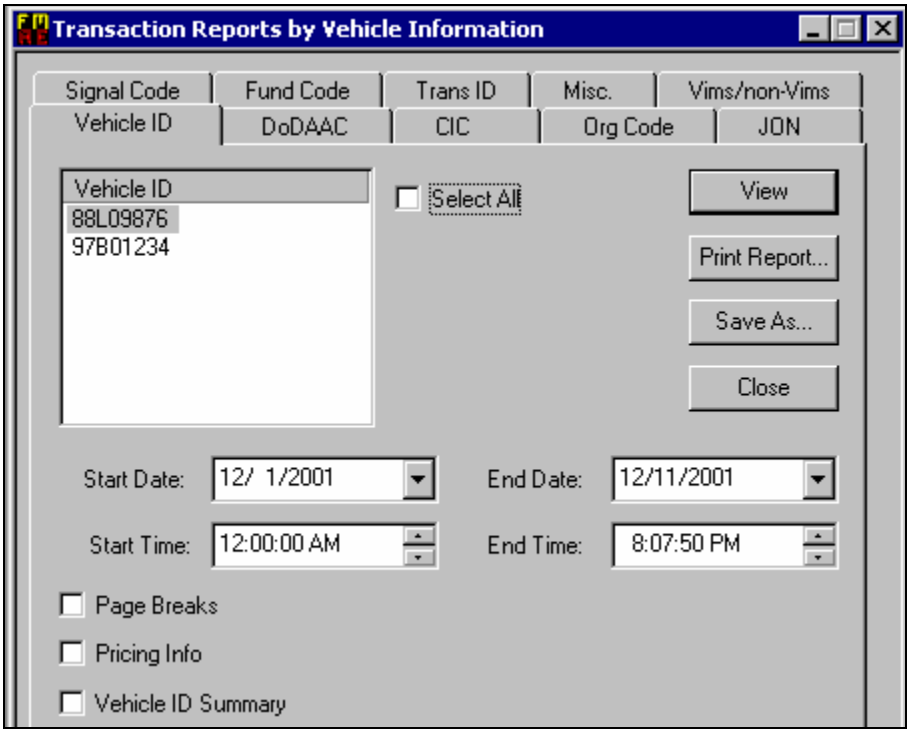


Figure 3-129, Transactions by Vehicle Information Generation Screen

Site ID

The Transaction Report Site ID Window provides the capability to run reports based upon all transactions spanning one or more specific sites. The transaction report by Site ID window has four buttons: View, Print Report, Save As and Close. Start and End Dates and Times are provided to cover specified ranges. A Page Breaks check box is provided to permit logical page breaks in the event the data should be printed. A Pricing Info check box is provided to display pricing data for each transaction. A Site ID Summary check box is provided to summarize data per site when multiple sites have been selected. A Vehicle Summary check box is provided to summarize data by each vehicle when multiple transactions have occurred for a vehicle. Use the Gallons check box to display quantities converted into gallons when some or all of the source transactions are recorded in a unit of issue other than gallons.

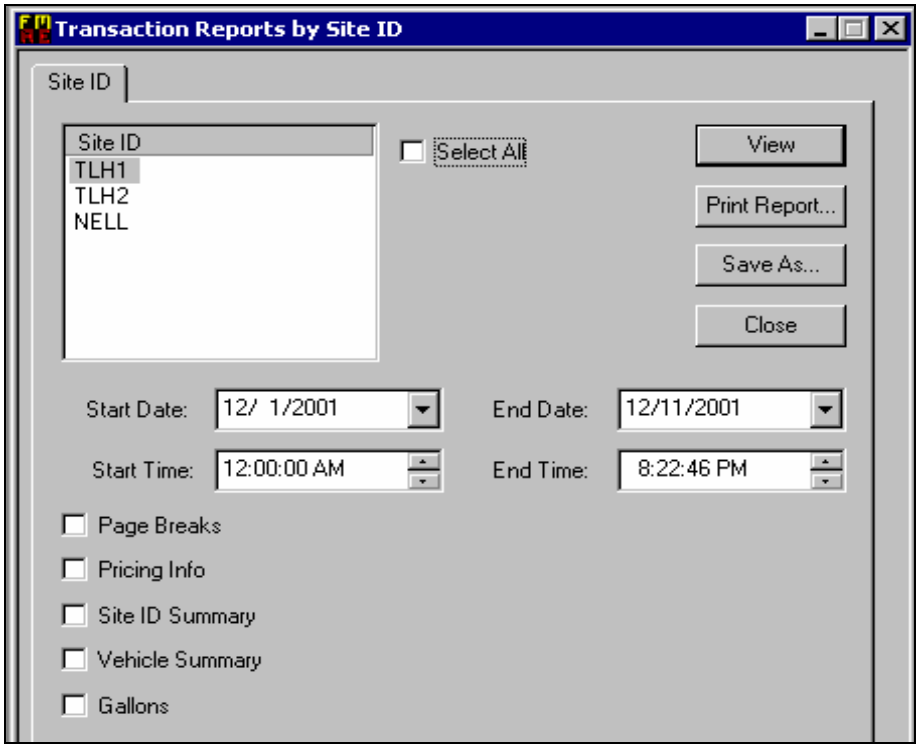


Figure 3-130, Transactions by Site ID Generation Screen

Transaction Code

The Transaction Report Transaction Code Window provides the capability to run reports based upon one or more specific Transaction Codes. The transaction report by Transaction Code window has four buttons: View, Print Report, Save As and Close. Start and End Dates and Times are provided to cover specified ranges. A Page Breaks check box is provided to permit logical page breaks in the event the data should be printed. A Pricing Info check box is provided to display pricing data for each transaction. A Trans Code Summary check box is provided to summarize data per transaction code when multiple sites have been selected. A Vehicle Summary check box is provided to summarize data by each vehicle when multiple transaction codes have occurred for a vehicle. Use the Gallons check box to display quantities converted into gallons when some or all of the source transactions are recorded in a unit of issue other than gallons.

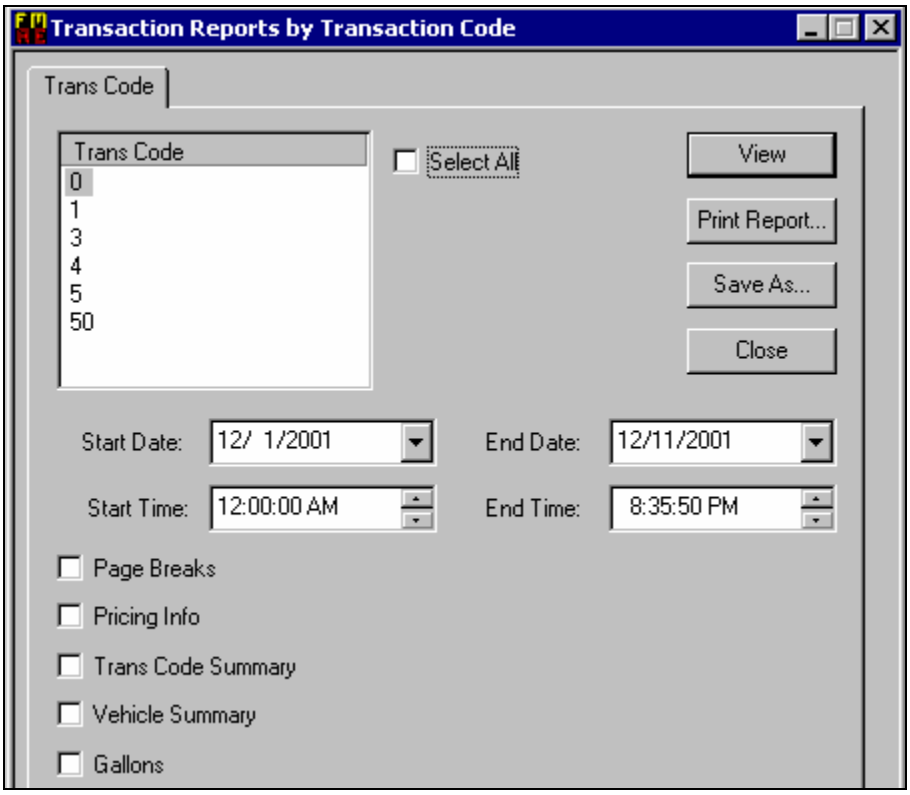


Figure 3-131, Transactions by Site ID Generation Screen

Transactions by Batch

The Transaction Report Transaction by Batch Window provides the capability to run reports based upon a specific number of transactions. The Transaction by Batch Report window has four buttons: View, Print Report, Save As and Close. A Transaction input box is provided that permits the user to select a specific number of transactions to be viewed/printed. Start and End Dates and Times are provided to cover specified ranges. A Page Breaks check box is provided to permit logical page breaks in the event the data should be printed A Pricing Info check box is provided to display pricing data for each transaction. A Site ID Summary check box is provided to summarize data per site when multiple sites have been selected. Use the Gallons check box to display quantities converted into gallons when some or all of the source transactions are recorded in a unit of issue other than gallons.

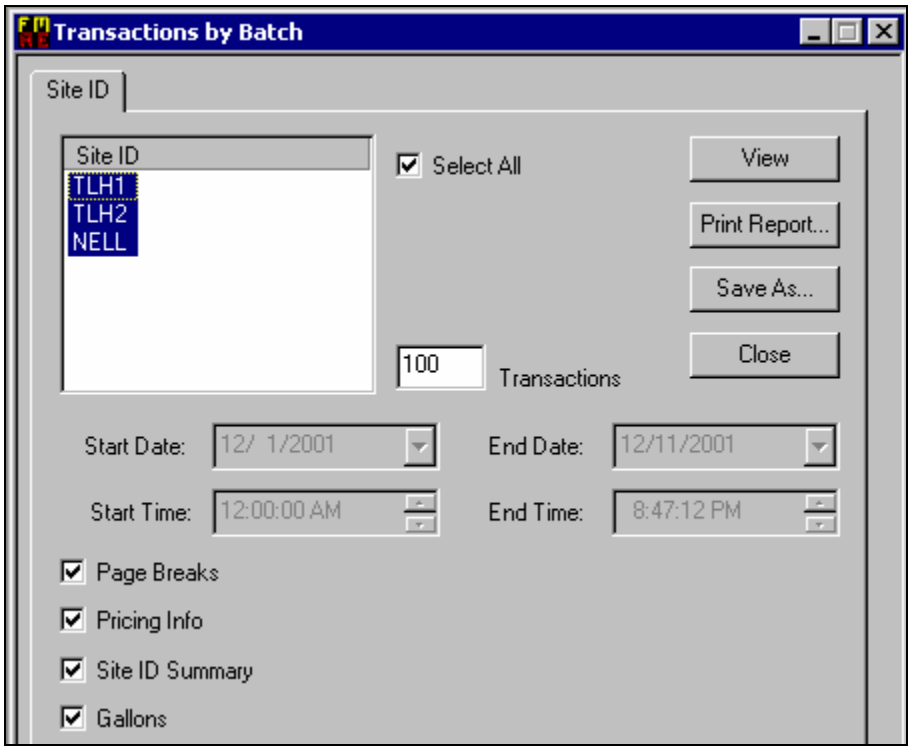


Figure 3-132, Transactions by Batch Generation Screen

Transaction Information

The Transaction Report by Transaction Information Window provides the capability to run reports based upon parameters selected by the user. The Transaction by Transaction Information Report provides combo boxes for each data element that can be selected by the user. Each time a transaction is downloaded and exported those transactional data elements that are not available in this report are added to the database for future selection. In addition, sort parameters are provided by data element and should be hierarchically. Start and End Dates and Times are provided to cover specified ranges.

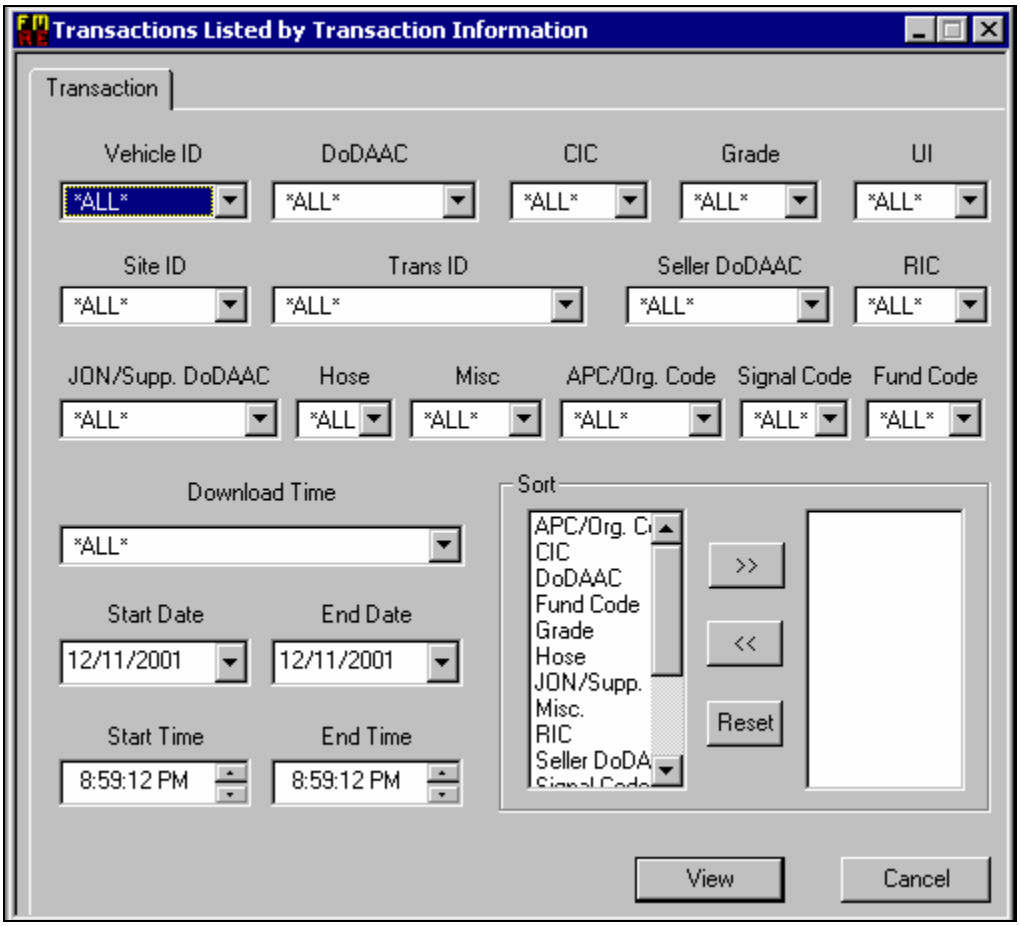


Figure 3-133, Transactions by Transaction Information Generation Screen

TMU (Tank Monitor Unit) Reports

The TMU Reports provide data relevant to the Tank Monitor Unit/Automated Tank Gauge (ATG). TMU reports are specific to the type of ATG installed. (TMU must be selected from the Configuration Menu, Site Listing, Site Configuration, TMU Tab). TMU reports can be generated for Tank Inventory (Veeder Root and Ronan), Shift Inventory (Veeder Root and Ronan), Alarm History (Veeder Root and Ronan), CSLD (Veeder Root and Ronan), Leak Detect (Veeder Root and Ronan), Liquid Sensor Alarm History (Veeder Root only), Vapor Sensor Alarm History (Veeder Root only)and Fuel Deliveries (Veeder Root and Ronan).

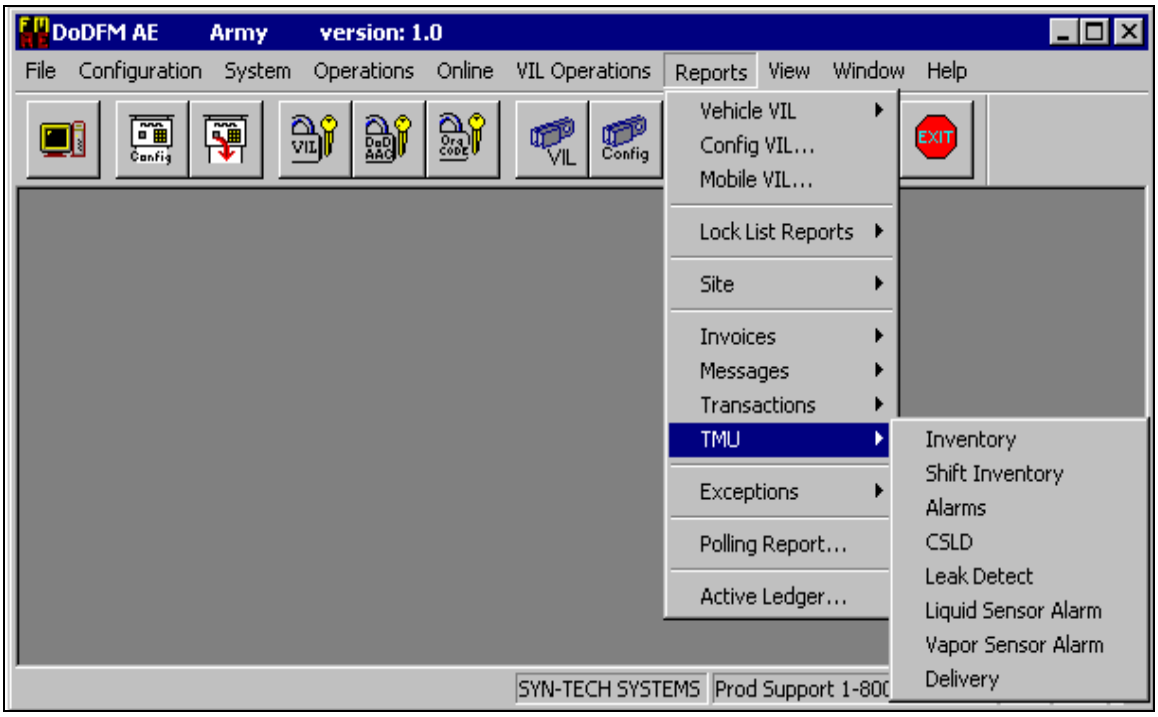


Figure 3-134, DoDFM AE Main Menu, Reports, TMU

The TMU Inventory Window is typical of all the TMU Reports windows in that one or more sites can be selected. Start and End Dates and Times are provided to cover specified ranges. The typical reports window has four buttons: View, Print Report, Save As and Close. A Page Breaks check box is provided to permit logical page breaks in the event the data should be printed.

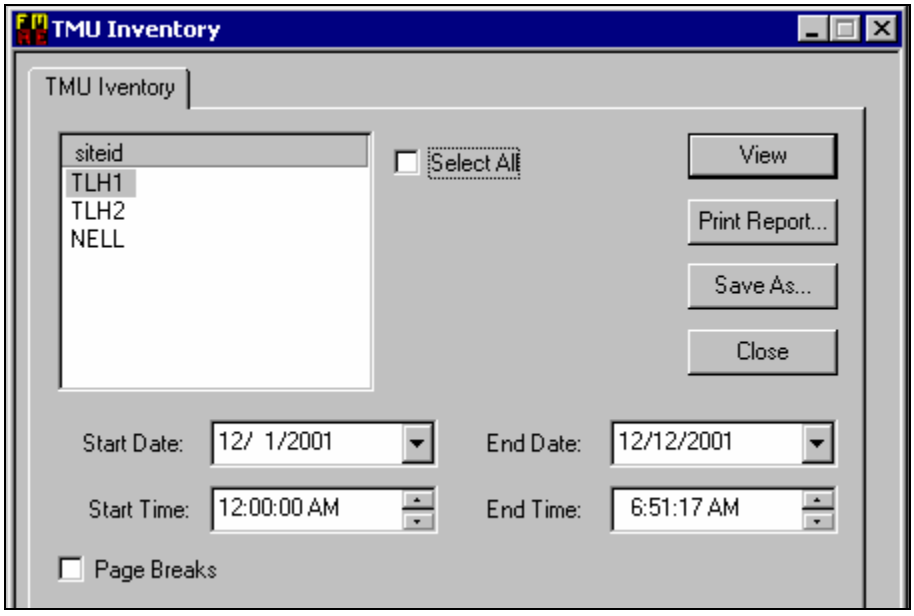


Figure 3-135, TMU Report Generation Screen, Typical

Exception Reports

The Exception Reports provide data relevant to non-standard actions. These reports are based, in part, upon the data encoded on the VIL encoding screen Grades Tab. Those data are Tank Size, Range and Fueling Limits.

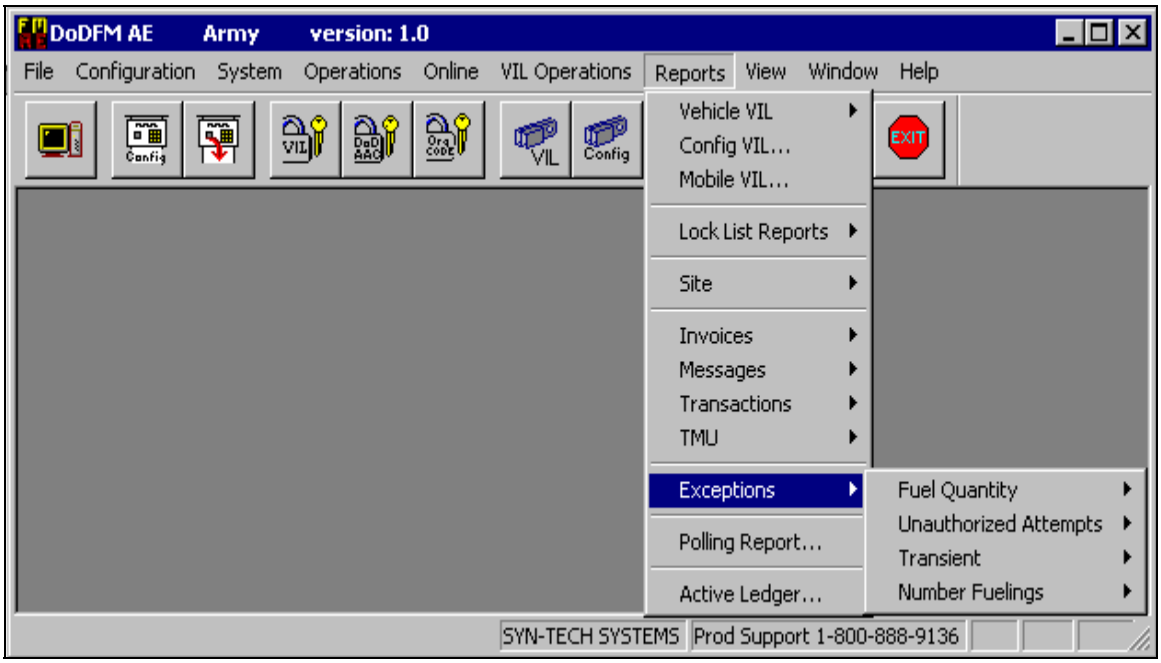


Figure 3-136, DoDFM AE Main Menu, Reports, Exceptions

Fuel Quantity
The Fuel Quantity Exception Report permits the user to run a report to determine how many vehicles by site have exceeded the fuel quantity limit as determined by the Tank Size quantity input on the VIL encoding screen's Grade Tab for that specific vehicle. Fuel Quantity Exception Reports can be generated based upon one or more vehicle registration numbers or by one or more sites.

Unauthorized Attempts
The Unauthorized Attempts Exception Report permits the user to run a report to determine which VILs that have been locked out of the system (locked out by Vehicle ID, DoDAAC or Organization Code/APC) have attempted to fuel at a specific site.

Transient
The Transient Exception Report permits the user to run a report to determine how many transient vehicles by Vehicle ID have fueled at a specific site. The transitory status of a vehicle is determined based upon whether or not the vehicle has been encoded locally and the vehicle ID is NOT found in the database. Transient Exception Reports can be generated based upon one or more vehicle registration numbers or by one or more sites.

Number Fuelings
The Number Fuelings Exception Report permits the user to run a report to determine how many vehicles by site have exceeded the number of fuelings per day limit determined by the Fuelings Limit quantity input on the VIL encoding screen's Grade Tab for that specific vehicle. Number Fuelings Exception Reports can be generated based upon one or more vehicle registration numbers or by one or more sites.

Polling Report

The Polling Report provides an historical list of all previous polling reports. Use the combo box to locate the polling report you want print.

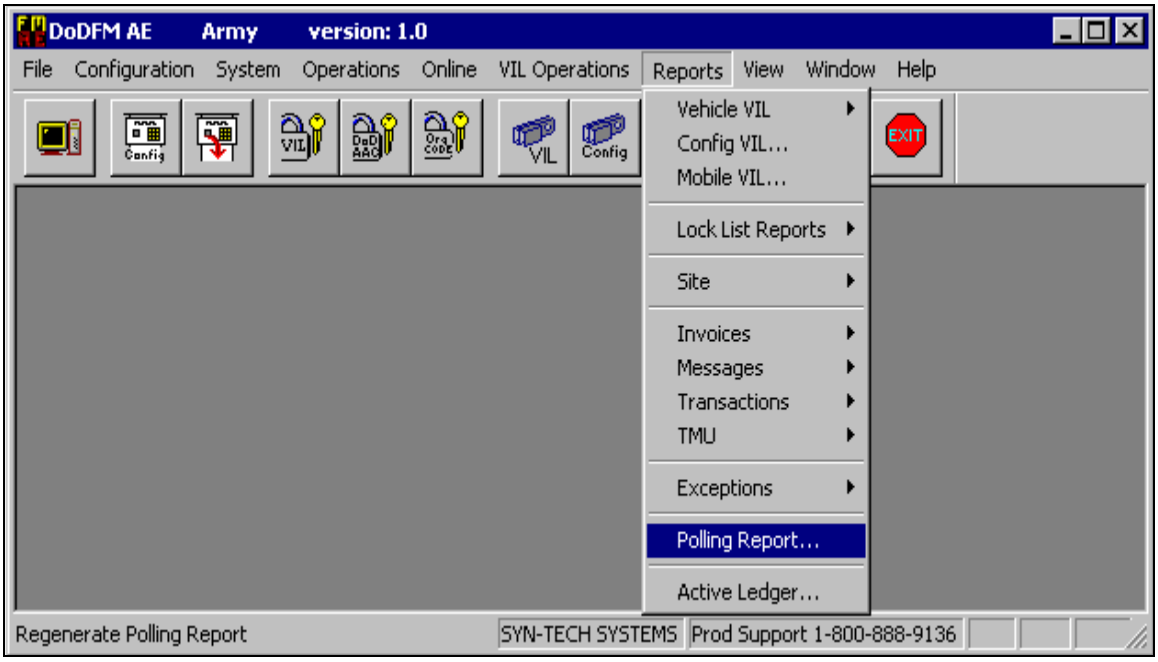


Figure 3-137, DoDFM AE Main Menu, Reports, Polling Report

Polling reports are listed by date and time of the download. Click OK to proceed.

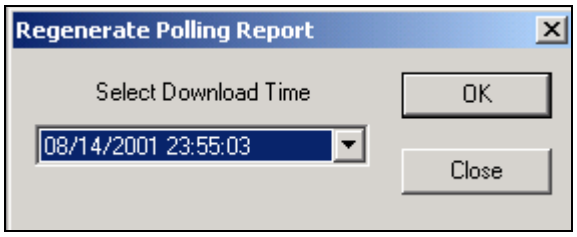
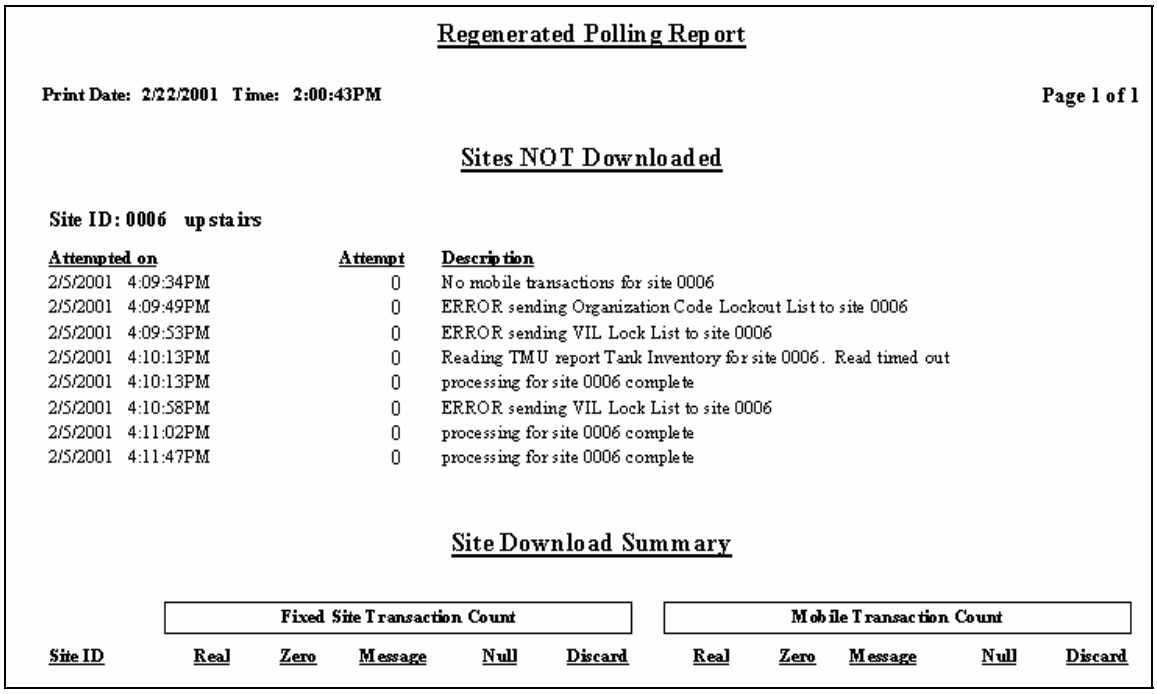


Figure 3-138, Polling Report Generation Screen



Regenerated Polling Report

Print Date: 2/22/2001 Time: 2:00:43PM Page 1 of 1

Sites NOT Downloaded

Site ID: 0006 upstairs

Attempted on	Attempt	Description
2/5/2001 4:09:34PM	0	No mobile transactions for site 0006
2/5/2001 4:09:49PM	0	ERROR sending Organization Code Lockout List to site 0006
2/5/2001 4:09:53PM	0	ERROR sending VIL Lock List to site 0006
2/5/2001 4:10:13PM	0	Reading TMU report Tank Inventory for site 0006. Read timed out
2/5/2001 4:10:13PM	0	processing for site 0006 complete
2/5/2001 4:10:58PM	0	ERROR sending VIL Lock List to site 0006
2/5/2001 4:11:02PM	0	processing for site 0006 complete
2/5/2001 4:11:47PM	0	processing for site 0006 complete

Site Download Summary

	Fixed Site Transaction Count					Mobile Transaction Count				
Site ID	Real	Zero	Message	Null	Discard	Real	Zero	Message	Null	Discard

Figure 3-139, Typical Polling Report

Active Ledger

The Active Ledger provides near real time reconciliation of the fuels account by product grade and FuelMaster site ID. As data (transactional and tank monitoring) are downloaded into the FuelMaster® software and manual inputs (sales, deliveries/receipts, adjustments and inventories) are processed each record is written to the database and included in the Active Ledger to provide reconciliation of the fuels account.

Figure 3-140, DoDFM AE Main Menu, Reports, Active Ledger

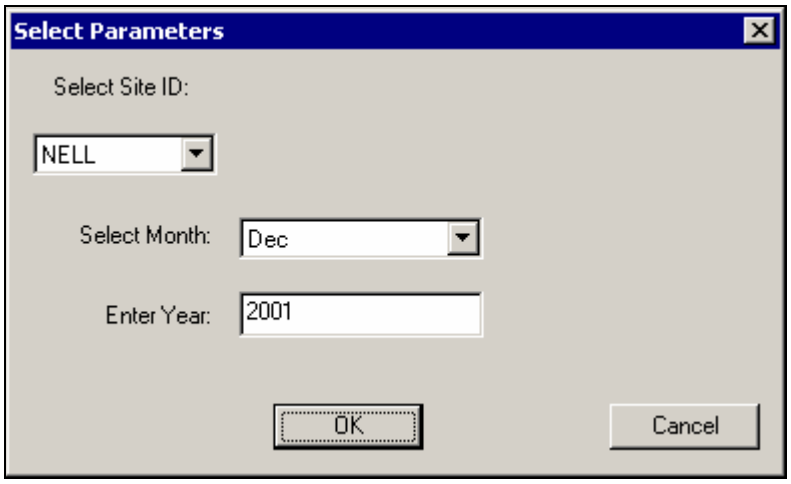


Figure 3-141, Active Ledger Generation Screen

In order to display the correct ledger, enter the Site ID and the Month and Year of the Active Ledger to be displayed. (Active Ledgers are maintained by month only). The Site ID and the Month may be selected from Combo boxes. Click OK to proceed.

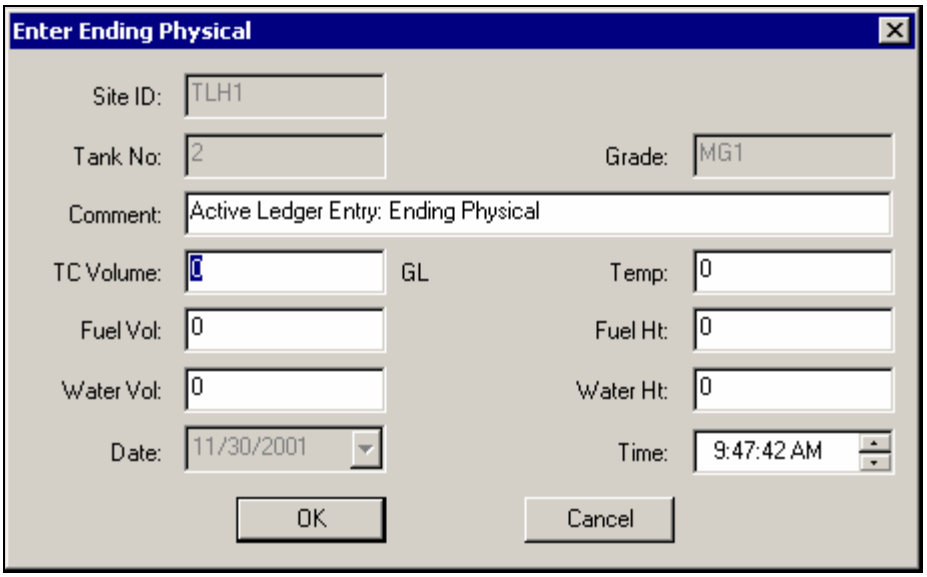


Figure 3-142, Active Ledger Ending Physical Screen

DoDFM AE will pause momentarily while the data specified is retrieved from the database. If no ending Physical Inventory exists for the specified ledger, the Ending Physical Inventory screen will be displayed requiring the user to input the previous months ending Physical Inventory before proceeding. (Last months ending physical inventory equals the current months beginning book inventory). Enter previous months ending Physical Inventory and Click OK to proceed.

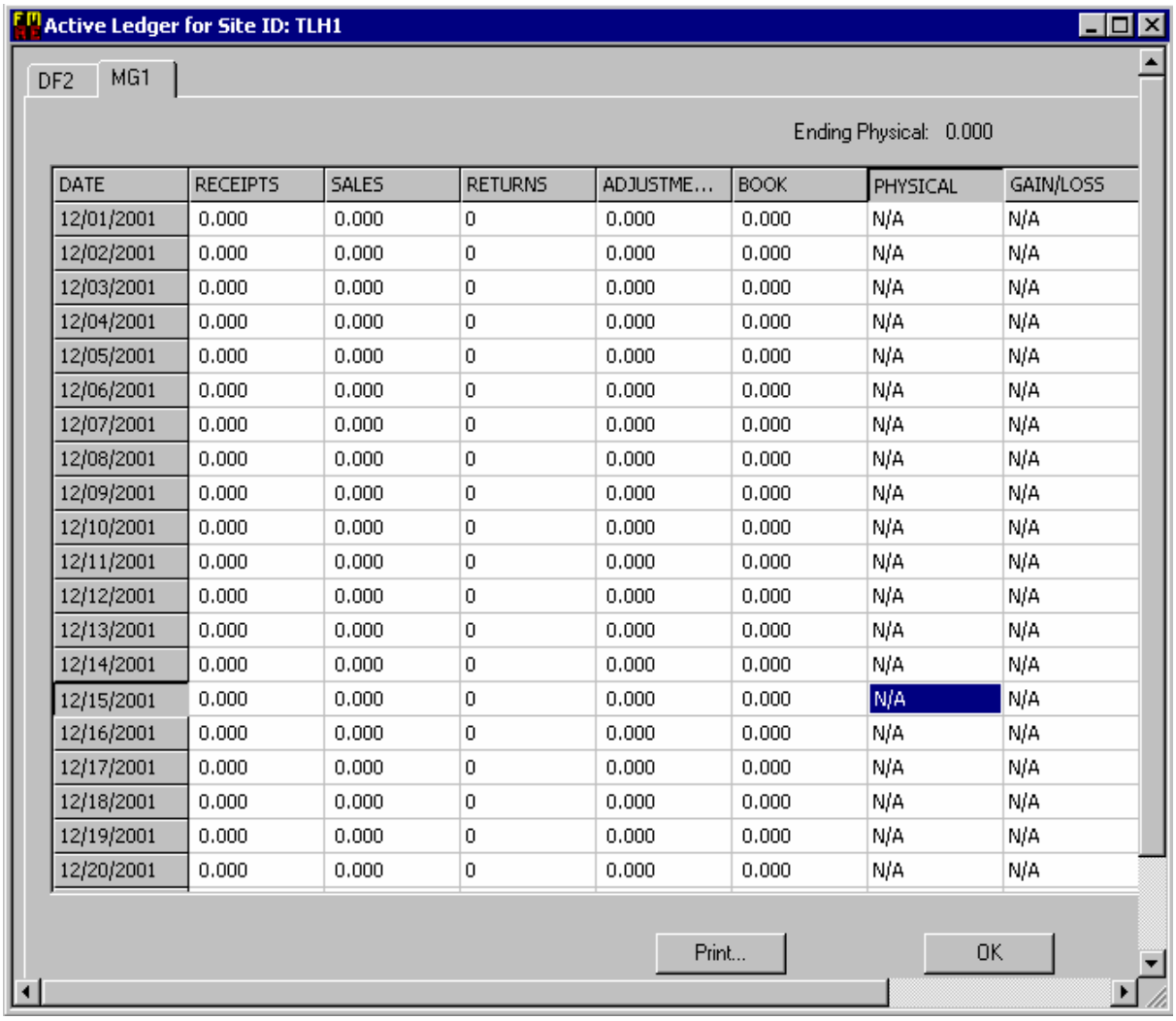


Figure 3-143, Active Ledger

The Active Ledger is displayed by product grade in numerical/alphabetical order. A number of tabs will be present beginning in the top left portion of the Active Ledger. These tabs will represent each of the sites product grades as determined during set up of data under the Tanks Tab during Site Configuration.

The momentary pause in displaying the Active Ledger is as a result of calculations performed on the data for the ledger specified. Successive requests to display additional ledgers (by product grade) are easily made by clicking on the specified tab beginning at the top, left-hand portion of the Active Ledger screen. As noted previously, if no ending Physical Inventory exists for the specified ledger, the Ending Physical Inventory screen will be displayed requiring the user to input the previous months ending Physical Inventory before proceeding.

Active Ledger columns are defined as follows:

Product Grade Code tab
A tab will be provided for each of the products at the site selected as determined during set up of data under the Tanks Tab during Site Configuration. Sites that have more than one tank of the same product grade will have their inventories added together for the report to display the aggregate inventory for a specified product grade. To view individual tank inventories, double click the physical box for a given day.

Date
Each day of the month is listed. Use the scroll bars to view data not present on the screen.

Receipts
Receipts are recorded as deliveries in the configuration, Site Listing, Sites, Tanks menu, Tank Information or by double clicking the receipts column of the Active Ledger and depressing the Add button on the receipts screen as depicted below. If there is more than one receipt for the same product grade they are added together. To view individual receipts, double click the receipts box for a given day to display the below screen.

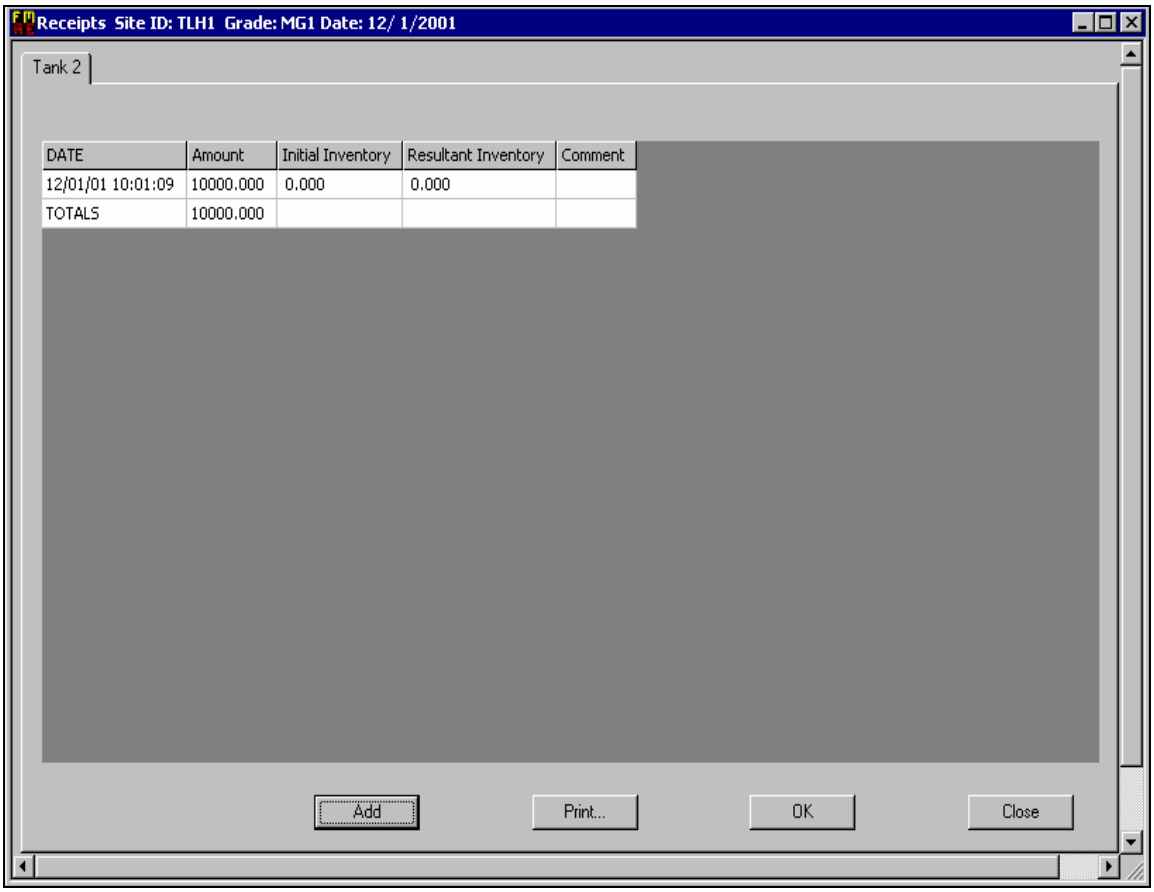


Figure 3-144, Receipts

Sales
All downloaded or manually entered transactions will appear in the Sales column for the day in which the transaction started. If the transaction began before midnight, but ended after midnight the transaction will be recorded for the day in which the transaction started. To view individual sales, double click the sales box for a given day.

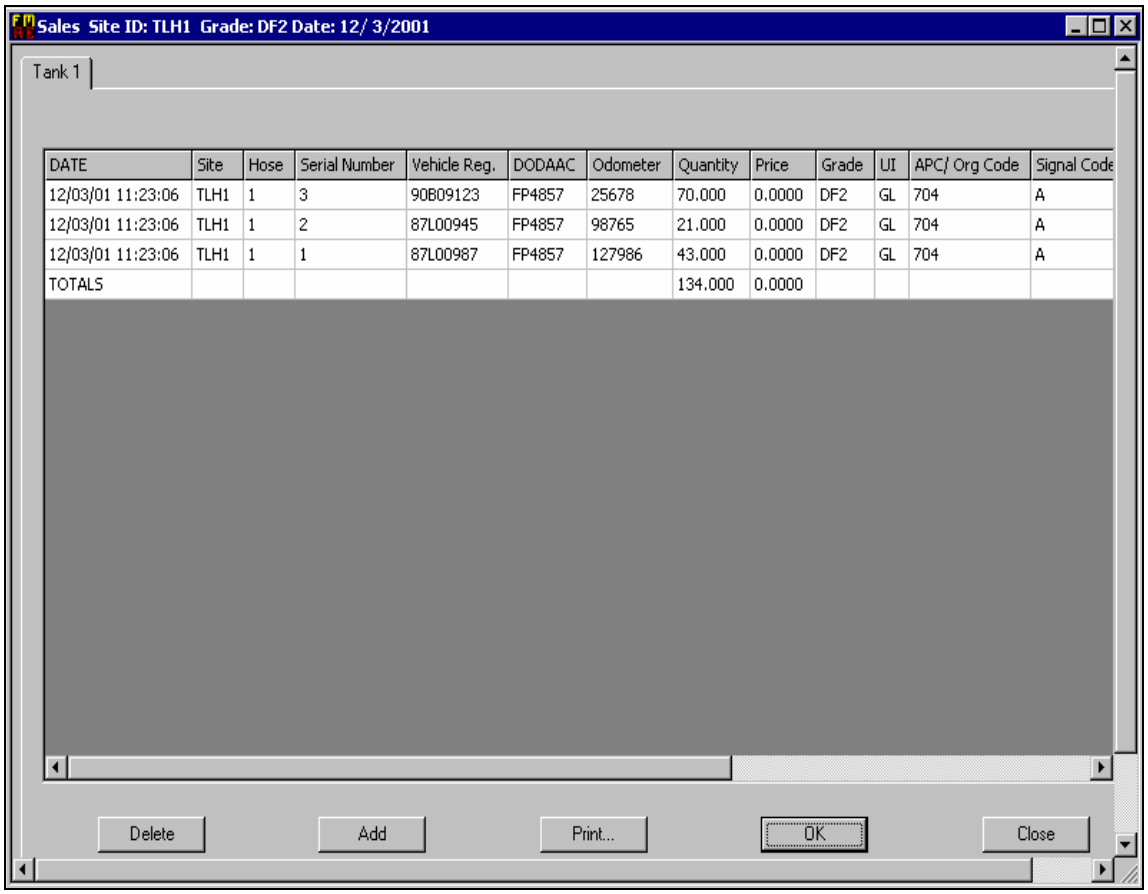


Figure 3-145, Sales

Returns
(Currently not active) Any return of a product into a tank, such as; Return to Bulk (RTB) or defuels.

Adjustments
Positive or negative adjustments to inventory. If there is more than one adjustment for the same product grade they are added together. To view individual adjustments, double click the adjustments box for a given day.

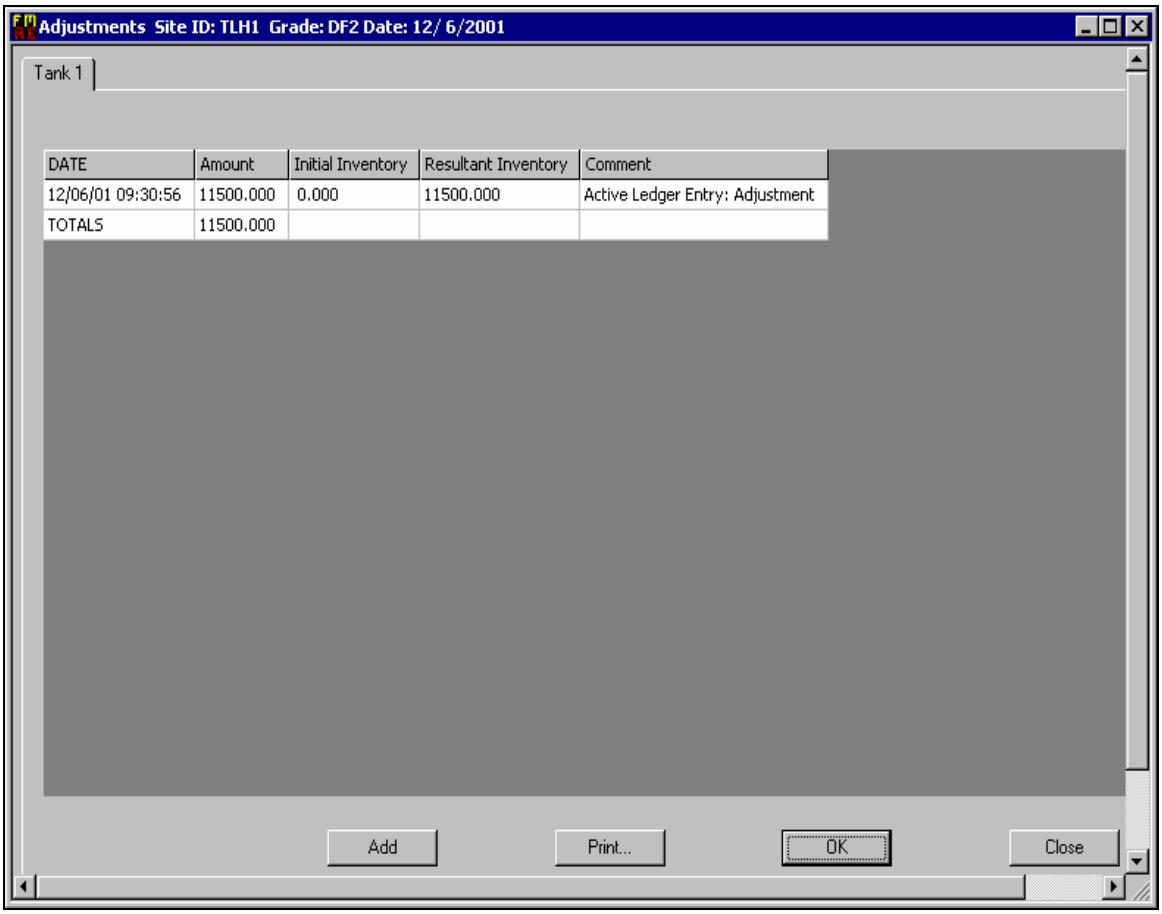


Figure 3-146, Adjustments

Book
The book inventory is calculated using the following formula:

- Book Inventory = previous days Physical Inventory + Receipts – Net Sales +/- Adjustments

Physical
The Physical Inventory equals the last tank monitor, tank gauge or stick reading recorded for the tanks. If more there is more than one tank for the same product grade they are added together. To view individual tank inventories, double click the physical box for a given day.

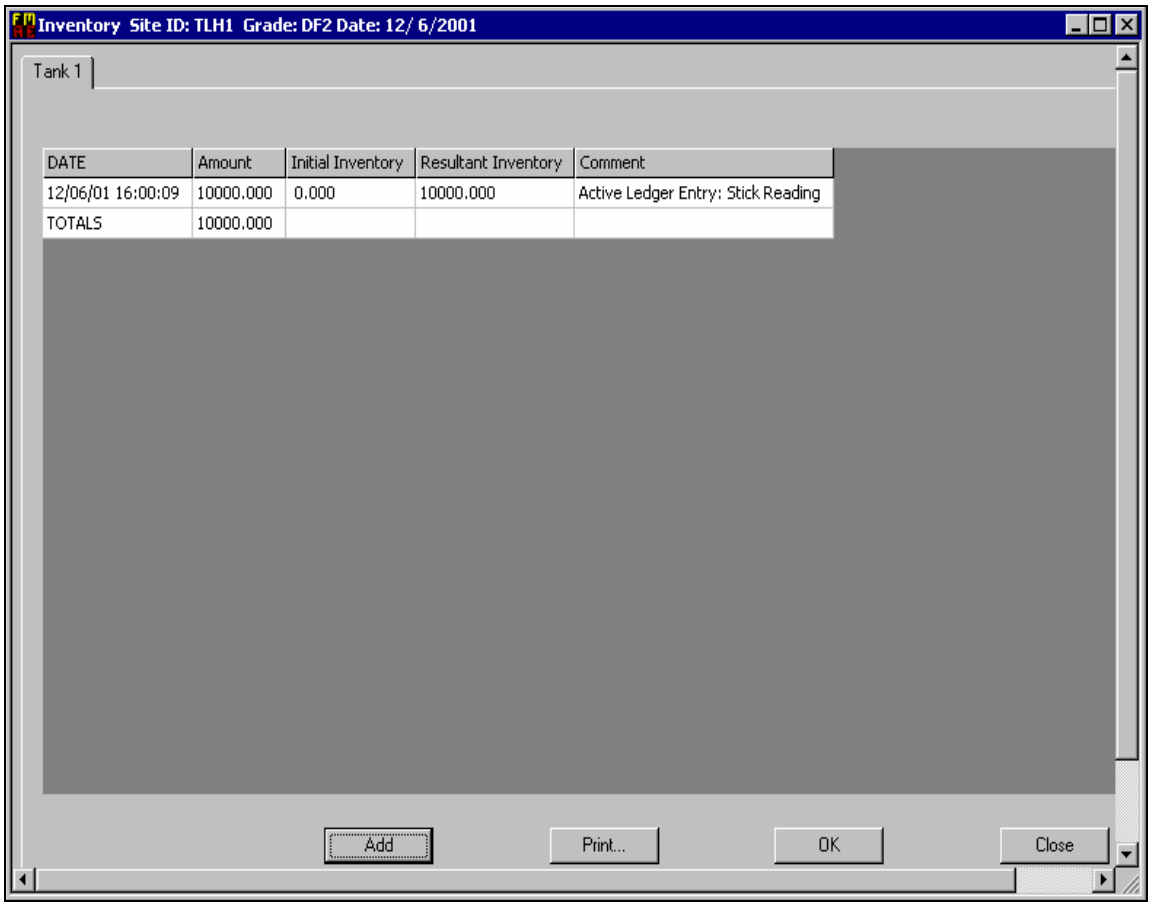


Figure 3-147, Physical Inventory

Gain/Loss

The Gain/Loss equals the Physical Inventory minus the Book Inventory.

Section VIII. The How-To Guide For The DoDFM AE Central Controller

How do I make a vehicle Prokee®?

1. **<Click>** the Prokee® Operations pulldown menu;
2. Highlight and **<Click>** the Vehicle Prokee® List option;
3. In the Vehicle ID dialog box, enter the appropriate Vehicle Prokee® information;
4. **<Click>** New and a Vehicle Prokee® record will open;
5. Fill in the appropriate information including the Grades and Misc screens and **<Click>** on the Encode button;

Note

Insure that the red LED on the Prokee® Encoder is on brightly and that the Prokee® Encoder is attached to the PC's parallel port.

6. Insert and hold a Prokee® into the Prokee® Encoder.

How do I make a Configuration Prokee®?

1. **<Click>** the Prokee® Operations pulldown menu;
2. Highlight and **<Click>** the Config Prokee® List option;
3. In the Config Prokee® Operations dialog box, enter the appropriate Config Code;
4. **<Click>** New and a Config Prokee® record will open;
5. Fill in the appropriate information and **<Click>** on the Encode button;

Note

Insure that the red LED on the Prokee® Encoder is on brightly and that the Prokee® Encoder is attached to the PC's parallel port.

6. Insert and hold a Prokee® into the Prokee® Encoder.

How do I make a Mobile Prokee®?

1. **<Click>** the Prokee® Operations pulldown menu;
2. Highlight and **<Click>** the Mobile Prokee® List option;
3. In the Mobile Prokee® Operations dialog box, enter the appropriate Mobile Code;
4. **<Click>** New and a Mobile Prokee® record will open;
5. Fill in the appropriate information and **<Click>** on the Encode button;

Note

Insure that the red LED on the Prokee® Encoder is on brightly and that the Prokee® Encoder is attached to the PC's parallel port.

6. Insert and hold a Prokee® into the Prokee® Encoder.

How do I look at (display) a Prokee®'s Contents?

1. **<Click>** the Prokee® Operations pulldown menu;
2. Highlight and **<Click>** the Display Prokee® Contents option;

Note

Insure that the red LED on the Prokee® Encoder is on brightly and that the Prokee® Encoder is attached to the PC's parallel port.

3. Insert and hold a Prokee® into the Prokee® Encoder; and,
4. A dialog box, appropriate to the type of Prokee® inserted, displays the Prokee®'s contents.

How do I setup communications for the PC's modem?

1. **<Click>** the Configuration pulldown menu;
2. Highlight and **<Click>** the Modem and Hardware Setup option;
3. In the Modem and Hardware Setup dialog box, enter the appropriate modem information; and,
4. **<Click>** Save.

How do I setup the Prokee® Encoder?
How do I define a parallel port?

1. **<Click>** the Configuration pulldown menu;
2. Highlight and **<Click>** the Modem and Hardware Setup option;
3. **<Click>** on the Misc. tab key;

Note

Undefined parallel ports are disabled (shown in gray versus black for active choices).

4. In the Modem and Hardware Setup / Misc. dialog box, enter the appropriate Encoder Port; and,
5. **<Click>** OK.

How do I enter site phone numbers?

1. **<Click>** the Configuration pulldown menu;
2. Highlight and **<Click>** the Site option;
3. Double **<Click>** on the site from the Site Listing screen;
4. In the FMU Connection dialog box, select the appropriate phone numbers; and,
5. **<Click>** Save.

How do I change the password?

1. **<Click>** the System pulldown menu;
2. Highlight and **<Click>** the Users;
3. Highlight the appropriate User and **<Click>** Open.
4. Check the Set/Change Password Check Box
5. Enter the New/Change Password in both the Password and the Verify box.
6. **<Click>** Save.

How do I change the site's name?

1. **<Click>** the Configuration pulldown menu;
2. Highlight and **<Click>** the Site option;
3. Double **<Click>** on the site from the Site Listing screen;
4. From the General tab fill in the site name in the Description dialog box;
5. **<Click>** Save

How do I change the hose numbers?

1. **<Click>** the Configuration pulldown menu;
2. Highlight and **<Click>** the Site option;
3. Double **<Click>** on the site from the Site Listing screen;
4. **<Click>** on the Config button, and the site will be dialed.
5. Once on line, select which FMU unit to work with and **<Click>** OK.
6. Make changes and;
7. **<Click>** Save

How do I change the divide ratio?

1. **<Click>** the Configuration pulldown menu;
2. Highlight and **<Click>** the Site option;
3. Double **<Click>** on the site from the Site Listing screen;
4. **<Click>** on the Config button, and the site will be dialed.
5. Once on line, select which FMU unit to work with and **<Click>** OK.
6. Make changes and;
7. **<Click>** Save

How do I change the system designator?

1. **<Click>** the Configuration pulldown menu;
2. Highlight and **<Click>** the Site option;
3. Double **<Click>** on the site from the Site Listing screen;
4. **<Click>** on the Config button, and the site will be dialed.
5. Once on line, select which FMU unit to work with and **<Click>** OK.
6. Make changes and;
7. **<Click>** Save

How do I change the julian date roll-over hour?

1. **<Click>** the Configuration pulldown menu;
2. Highlight and **<Click>** the Site option;
3. Double **<Click>** on the site from the Site Listing screen;
4. **<Click>** on the Config button, and the site will be dialed.
5. Once on line, select which FMU unit to work with and **<Click>** OK.
6. Make changes and;
7. **<Click>** Save

How do I change the valid key time out?

1. **<Click>** the Configuration pulldown menu;
2. Highlight and **<Click>** the Site option;
3. Double **<Click>** on the site from the Site Listing screen;
4. **<Click>** on the Config button, and the site will be dialed.
5. Once on line, select which FMU unit to work with and **<Click>** OK.
6. Make changes and;
7. **<Click>** Save

How do I change the pump finish time out?

1. **<Click>** the Configuration pulldown menu;
2. Highlight and **<Click>** the Site option;
3. Double **<Click>** on the site from the Site Listing screen;
4. **<Click>** on the Config button, and the site will be dialed.
5. Once on line, select which FMU unit to work with and **<Click>** OK.
6. Make changes and;
7. **<Click>** Save

How do I change the message duration?

1. **<Click>** the Configuration pulldown menu;
2. Highlight and **<Click>** the Site option;
3. Double **<Click>** on the site from the Site Listing screen;
4. **<Click>** on the Config button, and the site will be dialed.
5. Once on line, select which FMU unit to work with and **<Click>** OK.

6. Make changes and;
7. **<Click>** Save

How do I change the modem answer time?

1. **<Click>** the Configuration pulldown menu;
2. Highlight and **<Click>** the Site option;
3. Double **<Click>** on the site from the Site Listing screen;
4. **<Click>** on the Config button, and the site will be dialed.
5. Once on line, select which FMU unit to work with and **<Click>** OK.
6. Make changes and;
7. **<Click>** Save

How do I change the system time?

1. **<Click>** the Configuration pulldown menu;
2. Highlight and **<Click>** the Site option;
3. Double **<Click>** on the site from the Site Listing screen;
4. **<Click>** on the Config button, and the site will be dialed.
5. Once on line, select which FMU unit to work with and **<Click>** OK.
6. Make changes and;
7. **<Click>** Save

How do I change the system date?

1. **<Click>** the Configuration pulldown menu;
2. Highlight and **<Click>** the Site option;
3. Double **<Click>** on the site from the Site Listing screen;
4. **<Click>** on the Config button, and the site will be dialed.
5. Once on line, select which FMU unit to work with and **<Click>** OK.
6. Make changes and;
7. **<Click>** Save

How do I prevent a specific vehicle Prokee® from being accepted by a FMU (i.e., locked out)?

1. **<Click>** the Prokee® Operations pulldown menu;
2. Highlight and **<Click>** the Vehicle Prokee® List option;
3. Double **<Click>** on the Vehicle Prokee® from the Vehicle Listing;
4. **<Click>** on the check box labeled “authorized” which will remove the check mark;
5. This action will add a comment to the right of the checkbox;
6. **<Click>** Save

Note

Vehicle Prokee®s with Vehicle numbers in the lockout list are NOT accepted by the FMU only after the list is uploaded to the FMU.

7. **<Click>** the Online pulldown menu;
8. Highlight and **<Click>** the FMU Connection option;
9. **<Click>** on the site(s) to upload the list to;
10. **<Click>** on the Prokee® in the Lock List dialog box;
11. **<Click>** on the CONNECT button.

How do I get a FMU to accept a Config Prokee®?
How do I prevent Config Prokee®s from being accepted by a FMU?

1. **<Click>** the Prokee® Operations pulldown menu;
2. Highlight and **<Click>** the Config Prokee® List option;
3. Double **<Click>** on the Config Prokee® from the Config Prokee® listing.
4. Observe the check box labeled “authorized”;

- To authorize the Config Prokee® place a check mark in the authorized checkbox by clicking in it
- To deauthorize the Config Prokee® remove the check mark in the authorized checkbox by clicking in it.

5. **<Click>** Save

Note

Vehicle Prokee®s with Vehicle numbers in the lockout list are NOT accepted by the FMU only after the list is uploaded to the FMU.

6. **<Click>** the Online pulldown menu;
7. Highlight and **<Click>** the FMU Connection option;
8. **<Click>** on the site(s) to upload the list to;
9. **<Click>** on the Prokee® in the Lock List dialog box;
10. **<Click>** on the Connect button.

How do I prevent mobile Prokee®s from being accepted by a FMU?

1. **<Click>** the Prokee® Operations pulldown menu;
2. Highlight and **<Click>** the Mobile Prokee® List option;
3. Double **<Click>** on the Mobile Prokee® from the Mobile Prokee® Listing;
4. **<Click>** on the check box labeled “authorized” which will remove the check mark;
5. This action will add a comment to the right of the checkbox;
6. **<Click>** Save

Note

Vehicle Prokee®s with Vehicle numbers in the lockout list are NOT accepted by the FMU only after the list is uploaded to the FMU.

7. **<Click>** the Online pulldown menu;
8. Highlight and **<Click>** the FMU Connection option;
9. **<Click>** on the site(s) to upload the list to;
10. **<Click>** on the Prokee® in the Lock List dialog box;
11. **<Click>** on the Connect button.

Note

The Mobile Prokee® will not be locked out until the next time the Mobile FMU is downloaded to the master FMU and the list is then uploaded to the Mobile unit.

How do I prevent a group of vehicle Prokee®s from being accepted by a FMU based on their DoDAAC code?

1. **<Click>** the Prokee® Operations menu;
2. Highlight and **<Click>** the Edit **DoDAAC Org Code Lockout** option;
3. Enter the DoDAAC (6A/N) code to be locked out in the DoDAAC dialog box;
4. **<Click>** New

Note

Vehicle Prokee®s with DoDAAC numbers in the lockout list are NOT accepted by the FMU only after the list is uploaded to the FMU.

5. **<Click>** the Online pull down menu;
6. Highlight and **<Click>** the FMU Connection option;
7. **<Click>** on the site(s) to upload the list to;
8. **<Click>** on the DoDAAC in the Lock List dialog box;
9. **<Click>** on the Connect button.

How do I prevent a group of vehicle Prokee®s from being accepted by a FMU based on their Organization code?

1. **<Click>** the Prokee® Operations menu;
2. Highlight and **<Click>** the Edit **DoDAAC Org. Code Lockout** option;
3. Enter the APC/Organization Code (4A/N) to be locked out in the APC/Organization dialog box. Leave the % sign in the DoDAAC box.
4. **<Click>** New

Note

Vehicle Prokee®s with Org. Code numbers in the lockout list are NOT accepted by the FMU. Only after the list is uploaded to the FMU.

5. **<Click>** the Online pull down menu;
6. Highlight and **<Click>** the FMU Connection option;
7. **<Click>** on the site(s) to uploaded the list to;
8. **<Click>** on the Org. Code in the Lock List dialog box;
9. **<Click>** on the Connect button.

How do I retrieve fixed site FMU transaction data?

1. **<Click>** the Online pull down menu;
2. Highlight and **<Click>** the FMU Connection option;
3. **<Click>** on the site(s) to downloaded
4. **<Click>** on Download in the Transactions dialog box.
5. **<Click>** on the Connect button.

Note

The proper sequence for transaction download is:

- Perform a transaction query of the site.
- Review the query with the viewer for correct transactions /hose representation.
- If correct, continue with the retrieve transactions selection.
- If not correct contact Syn-Tech Systems, Inc. Product Support at 800-888-9136 before proceeding.

How do I query fixed site FMU transaction data?

1. **<Click>** the Online pulldown menu;
2. Highlight and **<Click>** the FMU Connection option;
3. **<Click>** on the site(s) to Query;
4. **<Click>** on the Query in the Transactions dialog box;
5. **<Click>** on the Connect button.

How do I retrieve mobile FMU transaction data?

1. **<Click>** the Online pulldown menu;
2. Highlight and **<Click>** the FMU Connection option;
3. **<Click>** on the site(s) to download;
4. **<Click>** on the Mobile Only in the Mobile Transactions dialog box;
5. **<Click>** on the Connect button.

Note

The proper sequence for transaction download is:

- Perform a transaction query of the site.
- Review the query with the viewer for correct transactions /hose representation.
- If correct, continue with the retrieve transactions selection.

- If not correct contact Syn-Tech Systems, Inc. Product Support at 800-888-9136 before proceeding.

How do I query mobile FMU transaction data?

1. **<Click>** the Online pulldown menu;
2. Highlight and **<Click>** the FMU Connection option;
3. **<Click>** on the site(s) to Query;
4. **<Click>** on the Mobile Only in the Mobile Transactions dialog box;
5. **<Click>** on the Connect button.

How can I be sure that a Prokee® will be authorized for a grade code at another fueling site?

NOTE

Super Grade Codes are only good at DoDFM AE sites.

From the Grades Code pulldown menu "SG" (super grade codes) select from these groups;

- SG CNX – for all compressed natural gas products
- SG DFX – for all high sulfur diesel products
- SG DLX – for all low sulfur diesel products
- SG LPX – for all Liquid Petroleum products
- SG MGX – for all unleaded gasoline products

How can I assign grade codes to products not listed in the grade code pulldown menu?

Eighteen (18) user definable grade codes have been provided to allow assignment of products that are not otherwise offered. The products are labeled "X 01" thru "X 18". In the FAS program, products and national stock numbers will need to be added.

What does the file name mean?
How do I know what a file contains?

There are four (4) transaction types (4 raw data) maintained by DoDFM AE FUELMASTER:

- "zzmmdd stationzz MMMddyyyy hhmmss.raw" is the DoDFM AE generated name for raw (unconverted binary information) retrieved transaction data from a Master FMU.

- "zzmmdd stationzz MMMddyyyy hhmmss.rqy" is the DoDFM AE generated name for raw (unconverted binary information) queried transaction data from a Master FMU.

- "zzmmdd stationzz MMMddyyyy hhmmss.mrw" is the DoDFM AE generated name for raw (unconverted binary information) retrieved transaction data generated by a Mobile FMU.

- "zzmmdd stationzz MMMddyyyy hhmmss.mqy" is the DoDFM AE generated name for raw (unconverted binary information) queried transaction data generated by a Mobile FMU.

These file names are thirty-three characters long (including spaces), and take advantage of Windows NT's convenient file definition. They represent:

- "zz" the station number;
- "mm" the number of the month;
- "dd" the day of the month;
- "stationzz" the station number;
- "MMM" the month (i.e. JAN, FEB, etc.);
- "yyyy" the last four digits of the year;
- "hhmmss" the time in hrs , minutes and seconds

A hypothetical file name could be “010322 station01 MAR2296 1520.qry”. This file contains converted queried transaction data from Master FMU number 01 on the 22nd of March 1996 @ 1520 o’clock. In DOS, this same hypothetical file with its shortened name of “010322~1.qry” represents converted queried transaction data from Master FMU number 01 on the 22nd of March.

When data is retrieved or queried, fixed site or mobile, the data is stored in both the “raw data” and “transactions” folders. The four types of raw data in the “raw data” folder being:

- “zzmmdd stationzz MMMddyyyy hhmmss.raw”;
- “zzmmdd stationzz MMMddyyyy hhmmss.rqy”;
- “zzmmdd stationzz MMMddyyyy hhmmss.mrw”; and,
- “zzmmdd stationzz MMMddyyyy hhmmss.mqy”.

The following files can be found in the “C:\Program Files\SynTech\DoDFM\raw data” folder.

- “zzmmdd stationzz MMMddyy tttt.raw” is the DoDFM Adv generated name for raw (unconverted binary information) retrieved transaction data from a Master FMU.

- “zzmmdd stationzz MMMddyy tttt.rqy” is the DoDFM Adv generated name for raw (unconverted binary information) queried transaction data from a Master FMU.

- “zzmmdd stationzz MMMddyy tttt.mrw” is the DoDFM Adv generated name for raw (unconverted binary information) retrieved transaction data generated by a Mobile FMU.

- “zzmmdd stationzz MMMddyy tttt.mqy” is the DoDFM Adv generated name for raw (unconverted binary information) queried transaction data generated by a Mobile FMU.

DoD FuelMaster® Advanced Enhanced User Manual
Appendix B - Fuel Grade Charts.

Super Grade MGX	Super Grade DFX	Super Grade DLX	Super Grade CNX	Super Grade LPX	Super Grade JPX	Super Grade AVX	Unassigned Grades
B57	60	DL1	CNG	LPG	J50	130	X22
E85	180	DL2	NAG	X13	JA1	145	X23
F57	220	DLA	X10	X14	JAA	887	X24
GUM	380	DLS	X11	X15	JAB	X19	X25
GUP	B65	DLW	X12		JB8	X20	X26
GUR	B76	HS1			JBA	X21	X27
GUS	BDI	HS2			JP4		
M-1	BKI	LS1			JP5		
M-3	DAT	LS2			JP7		
MBP	DB1	LS8			JP8		
MEG	DB2	LSS			JTS		
MG1	DEG	LSW			X16		
MG2	DF1	X07			X17		
MG3	DF2	X08			X18		
MG4	DF8	X09					
MG5	DFA						
MG6	DFR						
MG7	DFW						
MGB	DG2						
MGG	DJ1						
MGL	DJ2						
MGP	DKR						
MGR	DKW						
MGU	DL1						
MGX	DL2						
MLP	DLA						
MLR	DLS						
MMR	DLW						
MPR	F65						
MRR	F76						
MTP	FJ1						
MUG	FJ3						
MUI	FL4						
MUM	FL5						
MUP	FS1						
MUR	FS2						
MUS	FS4						
UKL	FS5						
UKU	FS6						
X01	HS1						
X02	HS2						
X03	J50						
	JP5						
	JP8						
	KJ1						

DoD FuelMaster® Advanced Enhanced User Manual
Appendix B - Fuel Grade Charts.

KJ2
KS1
KSD
KSN
KSR
KTN
LS1
LS2
LS8
LSS
LSW
MGO
PS1
PS2
PS3
RME
T54
UKD
UKK
X04
X05
X06